

**CLEAN WATER ACT SECTION 404(b)(1)
ALTERNATIVES ANALYSIS**

DUTRA HAYSTACK ASPHALT PLANT PROJECT

Prepared for:

U.S. Army Corps of Engineers
San Francisco District

Prepared by:

San Rafael Rock Quarry, Inc., dba Dutra Materials
San Rafael, California

Lucy Macmillan
Environmental Scientist
Mill Valley, California

Briscoe Ivester & Bazel LLP
San Francisco, California

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1.0 INTRODUCTION

1.1 Summary of Project Proposal

San Rafael Rock Quarry, Inc., dba Dutra Materials ("Dutra"), proposes to construct and operate an asphalt processing facility, the Dutra Haystack Asphalt Plant, on a site in Sonoma County near Petaluma, California, to provide asphalt, aggregate, sand, and related products for public and private construction projects in northern and western Marin County and southern Sonoma County. The proposed facility is intended to replace an earlier facility and, like it, serve as an integral part of regional operations of Dutra Materials and The Dutra Group, Inc., which together operate an aggregate quarry on the northern shore of San Francisco Bay, a barge and towing fleet, and materials distribution centers.

The project site comprises three parcels totaling about 35 acres. The site has been altered by past development and uses for a dairy ranch, residence, and disposal of quarry wash water in since abandoned settling ponds. Earlier structures have been removed, and the site is generally vacant and covered mostly by non-native grasses and ruderal vegetation. Seasonally inundated wetlands occur in several areas scattered across the site, and some brackish marsh areas front the Petaluma River. In total, the wetland areas cover about 12.17 acres.

Dutra proposes to construct the project on about 10 acres of the site situated to avoid and minimize impacts to wetlands. Construction of the project would entail filling approximately 1.37 acre of seasonal wetland on the project site and 0.47 acre of seasonal wetland on an adjacent site for construction of a facility to allow offloading and conveyance of materials from barges in the Petaluma River.

1.2 Purpose of this Alternatives Analysis

Filling the wetlands in order to construct the proposed project requires a permit from the U.S. Army Corps of Engineers pursuant to section 404 of the Clean Water Act (33 U.S.C. § 1344). Under section 404(b)(1), in deciding on such a permit, the Corps must apply Guidelines issued by the Environmental Protection Agency ("EPA"). Those Guidelines generally call for the Corps to consider whether there is a practicable alternative to the proposed project that would have less adverse impact on the aquatic ecosystem without also having other significant adverse environmental consequences.

The information presented in this Alternatives Analysis is intended to assist the Corps in its analysis of alternatives in compliance with the Guidelines. Toward this end, the Alternatives Analysis evaluates both off-site and on-site alternatives to the proposed project, all with the aim of ascertaining whether there is a practicable alternative to the proposed project that would have less adverse impact on the aquatic ecosystem without also having other significant adverse environmental consequences.

The information in this Alternatives Analysis is organized and presented in eight sections as follows:

Section 1: Introduction. This section introduces the proposed project, notes the need for a Corps permit and an associated analysis of alternatives, and states the purpose of this Alternatives Analysis.

Section 2: Regulatory Framework of Section 404(b)(1) Alternatives Analysis. This section describes the basic statutory and regulatory provisions underlying the Alternatives Analysis and explains some of the pertinent legal requirements and standards.

Section 3: Project Purpose. This section describes the legal aspects of defining project purpose under the Guidelines and presents and explains Dutra's overall project purpose.

Section 4: Waters of the United States. This section describes the waters of the United States, including wetlands, located on the project site and the adjacent site along the Petaluma River.

Section 5: Description of Proposed Project and Fill of Waters of the United States. This section describes the proposed project and its background and the wetlands that would be filled in order to construct the project.

Section 6: Method of Analysis of Alternatives. This section briefly explains how the off-site and on-site alternatives were selected.

Section 7: Analysis of Off-Site Alternatives. This section explains how off-site alternatives were selected and screened with respect to achieving the overall project purpose, availability, impacts to the aquatic ecosystem, practicability, and other significant adverse environmental consequences. It presents detailed analysis of eight alternatives, and ultimately concludes that there is no less environmentally damaging practicable off-site alternative to the proposed project that achieves the overall project purpose.

Section 8: Analysis of On-Site Alternatives. This section explains how on-site alternatives were screened with respect to achieving the overall project purpose, impacts to the aquatic ecosystem, practicability, and other significant adverse environmental consequences. It presents detailed analysis of two alternatives, i.e., a no-fill alternative and a reduced-fill alternative, and ultimately concludes that the latter is a less environmentally damaging practicable on-site alternative to the proposed project that achieves the overall project purpose.

2.0 REGULATORY FRAMEWORK OF SECTION 404(b)(1) ALTERNATIVES ANALYSIS

2.1 Corps of Engineers

In the Clean Water Act, Congress generally prohibited any person from discharging any "pollutant" into "navigable waters" from a point source except in compliance with several statutory provisions, two of which establish permit programs. (33 U.S.C. § 1311; see 33 U.S.C. § 1362.) The Environmental Protection Agency ("EPA") is primarily responsible for administering the Clean Water Act. (See 43 Ops. U.S. Atty. Gen. 15 (1979).) Under section 402 of the Act (33

U.S.C. § 1342), Congress authorized the EPA to administer a permit program for pollutant discharges, known as the National Pollutant Discharge Elimination System. In section 404 of the Act, Congress carved an exception out of the EPA's authority and gave to the Corps the authority to permit discharges of two particular types of "pollutants": "dredged" and "fill materials." (33 U.S.C. § 1342, 1344; 33 C.F.R. §§ 322.5, 323.6.) Under section 404, the Corps regulates discharges of "dredged or fill material" into "navigable waters." (33 U.S.C. § 1344.) "Navigable waters" is defined as "waters of the United States." (33 U.S.C. § 1362(7).)

Section 404(b)(1) provides that the Corps must issue such permits "through the application of guidelines" developed by the EPA. (See 33 C.F.R. §§ 320.2(f), 320.4(a)(1), 320.4(b)(4), 323.6(a).) The EPA issued final guidelines in 1980. (45 Fed. Reg. 85336 (1980); 40 C.F.R. Part 230.) These guidelines ("Section 404(b)(1) Guidelines" or "Guidelines") establish various criteria to be considered by the Corps in evaluating permit applications, one of which calls for evaluation of alternatives to the proposed discharge. This Alternatives Analysis is designed to provide the Corps with information to assist it in complying with this aspect of the Guidelines.

2.2 Regional Water Quality Control Board

The State Water Resources Control Board and the nine Regional Water Quality Control Boards also play a role in regulating wetlands, exercising different statutory authority depending on the circumstances.

First, while not immediately pertinent here, the boards exercise authority under Clean Water Act section 402 (33 U.S.C. § 1342) and correlative state statutes to regulate the discharge of "waste" into waters of the United States. The federal act authorizes states to assume responsibility for administering the National Pollutant Discharge Elimination System established by section 402, and California has done so. The State Board is the designated agency to exercise any powers delegated under the federal act. (33 U.S.C. § 1342(b); Water Code §§ 13160, 13370- 13389.) The regional boards operate under the State Board's supervision. (Water Code §§ 13164, 13168, 13170, 13222, 13245, 13320.) The boards establish effluent limits and water quality standards and issue permits called "waste discharge requirements." (Water Code §§ 13240-13270, 13374.) This delegated federal authority applies only to discharges of waste, which under federal law does not include discharges of dredged or fill material. (See 33 C.F.R. § 323.2(d), (e) (1996); Memorandum of Agreement on Discharges of Solid Waste, 51 Fed. Reg. 8,871 (1986).) California has not assumed responsibility for section 404 of the Clean Water Act, so discharges of dredged or fill material continue to be handled largely by the Corps.

Second, under Clean Water Act section 401 (33 U.S.C. § 1341), the State of California may review Corps permit applications to determine whether the proposed projects comply with various provisions of the Act and with state water quality standards (which the Act requires the state to adopt). (33 U.S.C. §§ 1313(a), 1341; 33 C.F.R. §§ 320.4(d); 40 C.F.R. Part 121.) The Legislature has designated the State Board as the state agency to exercise this authority (Water Code § 13160), and the State Board has delegated that authority, depending on circumstances, to its executive director and the regional boards (23 Cal. Code Reg. §§ 3855-3861). Under section 401, any applicant for a federal permit or license for any activity that may result in any discharge to a jurisdictional water must provide the federal permitting agency a "certification" from the state in which the discharge originates that the discharge will comply with applicable provisions of the

Clean Water Act and state water quality standards developed under the Act. If an applicant requests such a certification and the state fails or refuses to act on the request within a reasonable period of time (not to exceed one year), the certification requirement is deemed to be waived. No license or permit is to be granted until any required certification has been obtained or waived.

In California, the state water quality standards appear in various water quality control plans adopted by the State Board and several regional boards. The San Francisco Bay Regional Water Quality Control Board ("Regional Board") has adopted such standards in the Water Quality Control Plan for the San Francisco Bay Basin ("Basin Plan").

One provision of the Basin Plan is most pertinent here: "The Water Board uses the U.S. EPA's Section 404(b)(1), 'Guidelines for Specification of Disposal Sites for Dredge or Fill Material,' dated December 24, 1980, which is incorporated by reference into this plan, in determining the circumstances under which wetlands filling may be permitted." (Basin Plan, § 4.23.4.) By this provision, the Regional Board confirms that it uses the EPA's Guidelines, and not some new or different rule or criteria developed by the Regional Board, in evaluating alternatives to the proposed discharge. As this Alternatives Analysis is designed to provide the Corps with information to assist it in complying with the Guidelines, it serves to provide the Regional Board with such information as well.

2.3 Section 404(b)(1) Guidelines

The Guidelines generally require the Corps to find that a project it permits complies with various restrictions on discharges of dredged or fill material into navigable waters. (40 C.F.R. §§ 230.4, 230.10.) One such restriction pertaining to review of alternatives is the focus of this Alternatives Analysis. In that respect, the Guidelines provide:

[With certain exceptions not pertinent here], no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

(40 C.F.R. § 230.10(a).) For the sake of convenience in discussion, an alternative found to meet this standard or a proposed project for which no such alternative is found commonly is referred to as the "least environmentally damaging practicable alternative" or that phrase's acronym, "LEDPA."

The Guidelines elaborate: "An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." (40 C.F.R. § 230.10(a)(2).) The Corps thus must assess whether an alternative satisfies the overall project purpose for which the applicant seeks authorization from the Corps to discharge dredged or fill material, and in addition whether it is available and capable of being done considering cost, existing technology, and logistics. The Guidelines add that "[i]f it is otherwise a practicable alternative, an area not presently owned by an applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered." (*Id.*)

The Guidelines state two presumptions that sometimes arise with respect to "special aquatic sites," *i.e.*, sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and

riffle/pool complexes. (40 C.F.R. §§ 230.40-230.45.) Of these categories of sites, only “wetlands” are affected by this project. Where an activity associated with a discharge proposed for a wetland “does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (*i.e.*, is not ‘water dependent’),” the Guidelines state (1) “practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise” and (2) “all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.” (40 C.F.R. § 230.10(a)(3).)

As the Guidelines make plain, these presumptions are rebuttable. For projects that are not water dependent, if and when the applicant presents evidence to “clearly demonstrate otherwise,” the rebuttable presumptions have no further or continuing effect, and the availability of practicable alternatives is determined on the basis of the evidence presented. (*Id.*; see 54 Fed. Reg. 85336, 85338-85339 (1980), “the applicant may rebut the presumption through a clear showing in a given case”; *Hillsdale Environmental Loss Prevention, Inc. v. U.S. Army Corps of Eng’rs*, 702 F.3d 1156, 1168 (10th Cir. 2012); *Utahns v. United States DOT*, 305 F.3d 1152, 1163 (10th Cir. 2002); *Alliance for Legal Action v. U.S. Army Corps of Eng’rs*, 314 F.Supp.2d 543-544 (M.D. N.C. 2004).) “The determination that a project is non-water-dependent simply necessitates a more persuasive showing than otherwise concerning the lack of alternatives.” (*Town of Abita Springs v. U.S. Army Corps of Eng’rs*, 153 F.Supp.3d 894, 919 (E.D. La. 2015), quoting *Louisiana Wildlife Fed’n, Inc. v. York*, 603 F.Supp. 518, 527 (W.D. La. 1984).)

The Guidelines, while binding regulations, call for flexibility in their application depending on, among other things, the size and complexity of the project in question and the nature and degree of a project’s environmental effects.

The manner in which these Guidelines are used depends on the physical, biological, and chemical nature of the proposed extraction site, the material to be discharged, and the candidate disposal site, including any other important components of the ecosystem being evaluated. . . . These Guidelines allow evaluation and documentation for a variety of activities, ranging from those with large, complex impacts on the aquatic environment to those for which the impact is likely to be innocuous. It is unlikely that the Guidelines will apply in their entirety to any one activity, no matter how complex. It is anticipated that substantial numbers of permit applications will be for minor, routine activities that have little, if any, potential for significant degradation of the aquatic environment. It generally is not intended or expected that extensive testing, evaluation or analysis will be needed to make findings of compliance in such routine cases. . . .

The Guidelines user, including the agency or agencies responsible for implementing the Guidelines, must recognize the different levels of effort that should be associated with varying degrees of impact and require or prepare commensurate documentation. The level of documentation should reflect the significance and complexity of the discharge activity.

(40 C.F.R. § 230.6(a) & (b); see also *Hillsdale Environmental Loss Prevention, Inc. v. U.S. Army Corps of Eng’rs*, 702 F.3d 1156, 1168-1169, 1171 (10th Cir. 2012); *Greater Yellowstone*

Coalition v. Flowers, 359 F.3d 1257, 1271 (10th Cir. 2004); *Town of Norfolk v. U.S. Army Corps of Eng'rs*, 968 F.2d 1438, 1447 (1st Cir. 1992); 40 C.F.R. § 230.10; 45 Fed. Reg. 85336 (1980); Corps of Engineers, Memorandum for Commanders, Major Subordinate Commands and District Commands: Updated Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program, p. 19-20 (July 1, 2009).)

The analysis and determination of practicable alternatives is necessarily a fact-specific exercise calling for flexibility and judgment, not simple formulas. Accordingly, over the years, the Corps has issued guidance confirming as much. In Regulatory Guidance Letter 84-9, the Corps, while offering instructions on permit documentation, stated:

The discussion of practicable alternatives for any or all of the above requirements [*i.e.*, the Corps' permit regulations and the Guidelines] should be guided by the rule of reason, and should consider alternatives both in terms of the applicant's wishes and capabilities, and in terms of the need for or purpose to be served by the proposed activity.

The Corps and EPA have since issued further guidance elaborating on the flexibility afforded by the Guidelines and the level of effort and documentation appropriate for various projects and environmental effects.

The Guidelines do not contemplate that the same intensity of analysis will be required for all types of projects but instead envision a correlation between the scope of the evaluation and the potential extent of adverse impacts on the aquatic ecosystem. . . . Consequently, the Guidelines clearly afford flexibility to adjust the stringency of the alternatives review for projects that would have only minor impacts. Minor impacts are associated with activities that generally would have little potential to degrade the aquatic environment and include one, and frequently more, of the following characteristics: are located in aquatic resources of limited natural function; are small in size and cause little direct impact; have little potential for secondary or cumulative impacts; or cause only temporary impacts.

[¶]

The Guidelines provide the Corps and EPA with discretion for determining the necessary level of analysis to support a conclusion as to whether or not an alternative is practicable. . . . The preamble to the Guidelines provides clarification on how cost is to be considered in the determination of practicability: "Our intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project. . . ." [¶] Therefore, the level of analysis required for determining which alternatives are practicable will vary depending on the type of project proposed.

[¶]

A reasonable, common sense approach in applying the requirements of the Guidelines' alternatives analysis is fully consistent with sound environmental

protection. The Guidelines clearly contemplate that reasonable discretion should be applied based on the nature of the aquatic resource and potential impacts of a proposed activity in determining compliance with the alternatives test.

(Corps of Engineers and EPA, Memorandum to the Field, Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements (Aug. 23, 1993).)

In this context, the Guidelines also recognize that any proposals with impacts to jurisdictional areas generally are required to provide mitigation in one or more forms, including creation of new aquatic resources, and such mitigation should be considered in certain respects in evaluating alternatives to a proposed project. The Corps and EPA have agreed to a sequential preference of types of mitigation: First generally avoid impacts to the extent feasible, then minimize remaining impacts to the extent feasible, and finally compensate for any remaining impacts. (Corps and EPA, Memorandum of Agreement Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (Feb. 6, 1990).) The Corps will not use compensatory mitigation as a method to reduce environmental impacts in the evaluation of less environmentally damaging practicable alternatives under the Guidelines. (*Id.*) The Corps nonetheless naturally does take compensatory mitigation into account in determining compliance with the Guidelines, assessing the net environmental effects of a project, and deciding whether issuing a permit for project is in the public interest. (33 C.F.R. §§ 332.1(c)-(d)), 332.3.) In this regard, the Guidelines also provide that in assessing actions to minimize adverse effects “[w]hen a significant ecological change in the aquatic environment is proposed by the discharge of dredged or fill material, the permitting authority should consider the ecosystem that will be lost as well as the environmental benefits of the new system.” (40 C.F.R. § 230.77(d); see *Butte Environmental Council v. U.S. Army Corps of Engineers*, 607 F.3d 570, 581 (9th Cir. 2010); Corps of Engineers and EPA, Memorandum to the Field, Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements (Aug. 23, 1993); Corps of Engineers, Memorandum for Commanders, Major Subordinate Commands and District Commands: Updated Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program, p. 19-20 (July 1, 2009).)

The Corps and EPA have issued further guidance specifying the flexibility afforded under the Guidelines for “certain small projects affecting less than two acres of non-tidal wetlands”; in evaluating such projects, it is presumed that practicable alternatives are limited to property owned by the permit applicant. (Corps of Engineers and EPA, Memorandum for the Field, Individual Permit Flexibility for Small Landowners (Mar. 6, 1995).) The proposed project may or may not be “the expansion of a business” of a sort covered by this memorandum, but it certainly affects less than two acres of non-tidal wetlands, the very threshold of aquatic ecosystem impact that the Corps and EPA confirmed generally warrants a less intense level of effort and documentation appropriate to evaluate alternatives.

In light of this guidance, and as required by the Clean Water Act, this analysis addresses a reasonable range of alternatives to the proposed project including off-site and on-site alternatives.

In addition to assessing compliance with the Guidelines, the Corps must consider the impacts of the proposed project and its intended use on the “public interest”—and grant a permit unless the project is found to be contrary to the public interest. “The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments,” considering “[a]ll factors which may be relevant to the proposal” including conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.” (33 C.F.R. § 320.4(a)(1).) When the Corps finds that a project complies with the Guidelines, “a permit will be granted unless the [Corps] determines that it would be contrary to the public interest. (*Id.*)

3.0 PROJECT PURPOSE

3.1 Legal Aspects of Defining Project Purpose

The section 404(b)(1) Guidelines call for defining the project purpose in two different ways in order to enable the Corps to implement two different regulatory requirements in the Guidelines.

First, the Corps must define the “basic project purpose,” which is the fundamental, generic, or irreducible function or purpose of a project, typically expressed in one or two words. The basic purpose of a residential development project, for example, may be expressed as “providing housing” or “providing shelter,” and the basic purpose of a restaurant may be “feeding people.” The Corps will use the basic purpose to determine whether the project is water-dependent and requires access or proximity to, or siting within, a special aquatic site in order to fulfill that basic purpose—and thus whether the two presumptions about special aquatic sites arise. (40 C.F.R. § 230.10(a)(3); see Corps of Engineers, Memorandum for Commanders, Major Subordinate Commands and District Commands: Updated Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program, p. 15 (July 1, 2009).)

Second, the Corps must define the “overall project purpose,” which it will use to identify and evaluate practicable alternatives. The overall project purpose, typically stated in one or two sentences, more precisely defines the project’s purpose with respect to the applicant’s goals, critical project elements, and the geographic area of the project, so that real world alternatives can be identified and analyzed. (40 C.F.R. § 230.10(a)(2); see Corps of Engineers, Memorandum for Commanders, Major Subordinate Commands and District Commands: Updated Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program, p. 15 (July 1, 2009).)

In defining the overall project purpose, the Corps naturally considers the needs and objectives of the applicant. (See, e.g., Corps of Engineers, Memorandum for Commanders, Major Subordinate Commands and District Commands: Updated Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program, p. 15 (July 1, 2009).) Indeed, “it would be bizarre if the Corps were to ignore the purpose for which the applicant seeks a permit and to substitute a purpose it deems more suitable.” (*Sylvester v. U.S. Army Corps of Engineers*,

882 F.2d 407, 409 (9th Cir. 1989), quoting *Louisiana Wildlife Federation v. York*, 761 F.2d 1044, 1048 (5th Cir. 1985); *Butte Environmental Council v. U.S. Army Corps of Engineers*, 607 F.3d 570, 581 (9th Cir. 2010).) While the Corps needs to consider the applicant's project purpose, it also must ensure that the statement of overall project purpose is specific enough to allow meaningful analysis of the practicability of alternatives, but not so narrow as to exclude alternatives unnecessarily, "thus mak[ing] what is practicable appear impracticable." (*Sylvester, supra*, 882 F.2d at 409.) Elements included in the project purpose and used to evaluate alternatives, therefore, must be "necessary" and "legitimate," not merely "incidental" to the basic project purpose. (*Id.*; see also *Florida Clean Water Network v. Grosskruger*, 587 F.Supp.2d 1236, 1246 (M.D. Fla. 2008).)

The Corps and courts have addressed issues about legitimate elements of a project purpose in a variety of circumstances that are instructive.

A project may, for instance, be intended to serve a particular community or area. (E.g., *Great Rivers Habitat Alliance v. Army Corps of Engineers*, 437 F.Supp.2d 1019 (E.D. Mo. 2006), finding that project purpose properly limited alternatives to sites within a city in order to accommodate economic development of the city; *Butte Environmental Council v. U.S. Army Corps of Engineers*, 607 F.3d 570 (9th Cir. 2010), project purpose was to construct a medium-to-large regional business park with associated roads, utilities, and infrastructure within a city's sphere of influence; *Stewart v. Potts*, 996 F. Supp. 668 (S.D. Tex. 1998), project purpose was to provide an affordable, quality public golf course for the citizens of a city; USACE Permit Elevation Decision, Old Cutler Bay Associates (Oct. 9, 1990), acceptable project purpose was to construct a viable, upscale residential community with an associated regulation golf course in a portion of a county.)

Similarly, a project may be intended to complement a particular development in a specific location or redevelop a specific site. (E.g., *Friends of the Earth v. Hintz*, 800 F.2d 822, 833 (9th Cir. 1986), project purpose was to develop an area adjacent to sawmill and dock as a log storage and sorting area; *Sylvester v. United States*, 882 F.2d 407 (9th Cir. 1989), project purpose was to construct an 18-hole, links style championship golf course and other recreational amenities in conjunction with development of the then proposed Resort at Squaw Creek; *Nat'l Wildlife Federation v. Whistler*, 27 F.3d 1341 (8th Cir. 1994), project purpose was to provide boat access for a particular residential development.)

A project may rely on resources or infrastructure in a specific location. (E.g., *Northwest Environmental Defense Center v. Wood*, 947 F.Supp. 1371 (D. Or. 1996), proximity of educated labor pool, transportation infrastructure, and other amenities warranted limiting geographic scope of alternatives to area within a city; *Town of Abita Springs v. U.S. Army Corps of Eng'rs*, 153 F.Supp.3d 894, 920-923 (E.D. La. 2015), purpose of a test well was to gather data on economically viable oil and gas production in a particular geologic formation located in a confined area; Corps of Engineers and EPA, Memorandum to the Field, Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements (Aug. 23, 1993), "Some projects may be so site-specific (e.g., erosion control, bridge replacement) that no offsite alternative could be practicable. In such cases the alternatives analysis may appropriately be limited to onsite options only.") Moreover, a project, even though not water-dependent under the Guidelines, may nonetheless include access to water

as an essential and necessary element of the overall project purpose. (*Gouger v. U.S. Army Corps of Eng'rs*, 779 F.Supp.2d 588, 605-607 (S.D. Tex. 2011), approving an overall project purpose to develop residential homes along a specified waterway so residents would have access to the water; *Schmidt v. U.S. Army Corps of Eng'rs*, 2009 U.S. Dist. LEXIS 17060, No. 2:08-cv-0076 (W.D. Mich. 2009), approving an overall project purpose to construct a home on a specified river, while finding that specifying one view of the river from a particular vantage point would unduly limit the purpose.)

Elements of a project purpose may legitimately constrain the size and configuration of a project. For instance, such constraints may result from project elements required by concerns of safety, efficiency, or commercial viability of a project. (E.g., *Alliance for Legal Action v. U.S. Army Corps of Engineers*, 314 F.Supp.2d 534 (M.D.N.C. 2004), project purpose dictated the minimum runway length, runway configuration, and location of support facilities necessary to support a viable overnight express air cargo hub; *Florida Clean Water Network, Inc., v. Grosskruger*, 587 F.Supp.2d 1236, 1244-1245 (M.D. Fla. 2008), project purpose for airport relocation properly took into account federal airport safety and design standards, and applicant's need for a runway long enough to accommodate international flights.) Such constraints may arise from project elements necessary for consistency with planning decisions by the local or regional land use authority. (E.g., *Florida Clean Water Network*, 587 F.Supp.2d 1236, 1244-1247 (M.D. Fla. 2008), Corps project purpose for airport relocation properly included consistency with comprehensive local and regional planning efforts.)

Local planning and zoning laws, policies, and decisions may inform the overall project purpose and provide elements of that purpose. State and local law establishes a comprehensive framework for determining land uses and reviewing and approving projects. (Cal. Gov. Code §§ 65100 *et seq.*, 65300 *et seq.*, 65800 *et seq.*, 65800 *et seq.*, 65864 *et seq.*, 66410 *et seq.*) The Corps recognizes in its regulations that "primary responsibility for determining zoning and land use matters rests with state, local and tribal governments" and the Corps "will normally accept decisions by such governments on those matters unless there are significant issues of overriding national importance." (33 C.F.R. § 320.4(j)(2).) It is natural and reasonable thus for the Corps to take into account the planning and laws and decisions of state and local governments when considering a project's overall purpose and recognize that implementation of such planning, laws, and decisions may be an element of the overall project purpose. (*Friends of the Earth v. Hintz*, 800 F.2d 822, 833 (9th Cir. 1986); *Louisiana Wildlife Federation v. York*, 761 F.2d 1044, 1048 (5th Cir. 1985); *Great Rivers Habitat Alliance v. Army Corps of Engineers*, 437 F.Supp.2d 1019 (E.D. Mo. 2006); *Florida Clean Water Network*, 587 F.Supp.2d 1236, 1244-1247 (M.D. Fla. 2008).)

Dutra has taken the foregoing guidance into account in stating its overall project purpose.

3.2 Overall Project Purpose of Dutra Haystack Asphalt Plant Project

3.2.1 Purpose of Project Approved by the County of Sonoma

Dutra applied to the County of Sonoma for approval (in the form of general and area plan amendments, zoning, and a use permit) of a project at 3355 Petaluma Boulevard South, Petaluma, California, to construct and operate an asphalt batch plant and concrete and asphalt

recycling facility with dock facilities on the Petaluma River to receive barged sand and aggregates.

The County prepared an extensive Draft Environmental Impact Report in keeping with the California Environmental Quality Act (“CEQA”) for several specified purposes including to enable the County to consider the environmental consequences of the proposed project and, most pertinent here, “inform . . . state and federal agencies of the nature of the proposed project, its potentially significant environmental effects, feasible mitigation measures to mitigate those effects, and its reasonable and feasible alternatives.” (County of Sonoma, Draft Environmental Impact Report, Dutra Haystack Landing Asphalt and Recycling Facility (“DEIR”) I-1 (Jan. 2008).)

The County summarized in the DEIR that the “project consists of construction and operation of an asphalt batch plant, an asphalt recycling area, and an aggregate materials off-loading, storage and distribution facility for Dutra Materials (aka The Dutra Group).” (DEIR I-1.) It elaborated that “Dutra would relocate its existing temporary asphalt batch plant at 1601 Petaluma Boulevard South to the project site” and “[t]he existing asphalt plant consists of a main hopper, several feeder hoppers, diesel and oil storage tanks, a drum, bag house and two silo towers.” (DEIR III-37.) It further provided an extensive project description. (DEIR III-37 to III-71.)

While CEQA does not call for stating a project “purpose” *per se*, the County did state the “project objectives”:

- Construct a replacement asphalt facility capable of receiving, processing, and providing a variety of asphalt, recycled asphalt products, and general construction materials such as sand and rock.
- Construct a facility similar to the temporary facility, capable of continuing to meet the asphalt and construction material demands of private and government projects in southern Sonoma County and Marin County.
- Reduce truck trips by locating the facility within reasonable distance of source quarries located in Sonoma and Marin Counties, as well as within reasonable proximity of the southern Sonoma County and Marin County markets.
- Locate the facility in proximity to a naturally deep-water site along the Petaluma River where a barge and off-load facilities can accommodate deliveries of aggregate by water, further reducing truck traffic on Highway 101.
- Locate the facility in proximity to the any railroad tracks for efficient distribution of material if the railroad option becomes feasible in the future.
- Provide easy access to and from Highway 101 in both the north-bound and south-bound directions to minimize the plant’s effect on local traffic unless delivering a finished product for local needs.
- Locate the facility among surrounding industrial or manufacturing land uses that are compatible with the proposed asphalt and recycling operations.
- Locate the facility away from downtown areas and commercial and office land uses.
- Minimize visibility of operations occurring on the site by screening the site from the highway and nearby residences.

- Locate, design and operate the facility in a manner that would create minimal disturbance of critical habitat such as wetlands and the Petaluma River.

(DEIR III-71; Sonoma County Board of Supervisors, Resolution No. 10-0916A, Exhibit “D” Alternatives, (“Resolution Ex. D”) pp. 1-2.)

The County used these project objectives to identify, screen, and evaluate alternatives to the proposed project. (DEIR VII-1 to VII-20.) The County identified and screened many alternatives, explaining why many were infeasible, and evaluated in detail four alternatives, the no project alternative, reduced production alternative, modified site plan alternative, and alternative site. (*Id.*; Resolution Ex. D, pp. 4-14.)

After extensive administrative proceedings, during which the project was revised to address various expressed concerns, the County certified a Final Environmental Impact Report (“FEIR”) and approved the project at 3355 Petaluma Boulevard South consisting of an asphalt batch plant and aggregate and sand distribution facility with a conveyor connecting to an existing barge off-loading facility on the Petaluma River.

3.2.2 Purpose of Project Presented in Application to Corps of Engineers

Dutra applied to the Corps of Engineers for a permit to fill certain wetlands on the site in order to construct and operate the project approved by the County. In its submittal, it explained:

The Dutra Group is proposing to establish an asphalt plant facility on and associated conveying system to the approximately 35-acre Haystack Landing project site, located at 3355 Petaluma Boulevard South bordering Petaluma in Sonoma County, California. The facility will take delivery of aggregate and sand from the existing Landing Way barge offload facility and process some aggregate into the finished asphalt product and sell the remainder of the aggregate directly to the public. The offloading will occur at the Landing Way barge offloading facility (owned by Shamrock Materials, Inc.) located at 210 Landing Way in Petaluma, and will be transferred by an enclosed electric conveyor on the Landing Way Property, over the Barton property to the south and cross over the SMART (Sonoma Marin Area Rail Transit) right-of-way to the Haystack property to the southwest.

Letter, L. Macmillan to B. Matsumoto, Corps, R. Olah, U.S. Fish and Wildlife Service, G. Stern, National Marine Fisheries Service, and A. Farres, San Francisco Bay Regional Water Quality Control Board (Dec. 15, 2014).)

In its Public Notice of the proposed project, the Corps stated that the “basic project purpose” used to determine whether the project is water dependent is “to construct a new asphalt plant and associated features.” (Corps, Public Notice No. 2003-281040, p. 1 (Sept. 15, 2015).) It stated that the “overall project purpose” is “to construct a new asphalt plant to provide asphaltic concrete to public and private construction projects in southern Sonoma County and northern Marin County.” (*Id.*) It further described the project:

[T]he applicant proposes to construct a new asphalt plant and associated stockpiles of rock, sand, and recycled asphalt used to produce finished products. [¶] The new asphalt plant, which would be located at [the project site], would consist of a six product cold feed basin assembly, a 400 ton per hour counter flow drum mix assembly, twin oil storage tanks, four 100 ton storage silo assemblies, a heating oil plant, and a truck scale. An operator's compartment and electrical motor control would also be incorporated into the plant, along with a small office complex . . . [¶] A conveying system would be erected to transport materials from the existing Landing Way off-load facility to the plant site. Interim trucking of materials to the site would occur for three years while the conveyor system is constructed.

(*Id.*)

Based on its evaluation under the Guidelines, the Corps found that “the project is not dependent on location in or proximity to waters of the United States to achieve the basic project purpose.” (*Id.* at 4.) “This conclusion,” added the Corps, “raises the (rebuttable) presumption of the availability of a practicable alternative to the project that would result in less adverse impact to the aquatic ecosystem, while not causing other major adverse environmental consequences.” (*Id.*)

The Corps noted that the applicant had submitted an analysis of project alternatives, which it was reviewing. (*Id.*)

3.2.3 Applicant's Overall Project Purpose

The Guidelines contemplate refinement of a statement of an overall project purpose in the course of preparing and considering analysis of alternatives under its provisions. The Guidelines note, for instance, that the analysis of alternatives for National Environmental Policy Act (“NEPA”) documents “will in most cases provide the information for the evaluation of alternatives under these Guidelines,” but “[o]n occasion, these NEPA documents may address a broader range of alternatives than required to be considered under [40 C.F.R. section 230.10(a)] or may not have considered the alternatives in sufficient detail to respond to the requirements of these Guidelines, [in which case] it may be necessary to supplement these NEPA documents with this additional information.” (40 C.F.R. § 230.10(a)(4).) The Corps thus routinely coordinates with applicants during the course of its permit process to develop and refine statements of overall project purpose appropriate for evaluation of alternatives under the Guidelines. (E.g., *Butte Environmental Council v. U.S. Army Corps of Engineers*, 607 F.3d 570, 580-581 (9th Cir. 2010).)

With that end in mind and taking into account the principles and factors described in section 3.1 above, Dutra states its overall project purpose as follows:

The overall project purpose is to construct and operate a commercially competitive asphalt processing facility with access to a navigable waterway to provide asphalt, aggregate, sand, and related products for public and private construction projects in northern and western Marin County and southern Sonoma

County. The proposed facility is intended to replace an earlier facility and, like it, serve as an integral part of regional operations of The Dutra Group, which operates an aggregate quarry on the shore of San Francisco Bay, a barge and towing fleet, and materials distribution centers.

4.0 WATERS OF THE UNITED STATES

Of the 35 acres comprising the project site about 12.17 acres are waters of the United States. An adjoining 2.14-acre site ("Conveyor Corridor") on which facilities would be built for offloading and conveying material from barges in the Petaluma River contains about 0.47 acres of waters of the United States.

The wetland areas on the project site and adjacent site are described below and delineated on Figure 1.

Drainage Ditches

Several drainage ditches occur on the project site. Most of these ditches support shallow pools of standing water, and two of the drainage ditches appear to be tidally influenced. Illustrated on Figure 1 as drainage ditch DD1 and drainage ditch DD2 in the central portion of the property, these areas drain into a larger drainage ditch along the railroad tracks that parallels the eastern property boundary. The drainage ditch within the railroad easement is outside the project area and therefore is not mapped on the project site. Aerial photograph review indicates that the railroad ditch drains to the Petaluma River via a tidally-influenced slough.

A smaller drainage ditch, delineated as drainage ditch DD3, parallels the southern property line for approximately 500 feet and is approximately 3 feet wide as shown on Figure 1. Saturated soils were observed in March 2003 in the eastern portion of the ditch where it connects to a pond located east of the property. This area also appears to be marginally tidally influenced.

The remaining ditches (drainage ditches DD4 and DD5) are probably brackish given the vegetation composition of cattail and pickleweed. It appears that the most northern of the ditches (drainage DD6) may convey and contain freshwater as there is no evidence of a direct hydrologic connection to any of the other tidally influenced ditches on the project site and the vegetation growing in drainage ditch DD6 consists primarily of cattails.

The ditches on Parcel A comprise approximately 1.53 acres.

Seasonally Inundated Wetlands

A total of nine seasonally inundated wetland areas ranging in size from 0.07-acre to 4.0 acres occur on the site as illustrated on Figure 1. All of these areas occur within areas defined by former man-made siltation ponds and, as a result, exhibit reduced habitat quality.

Wetland A is located in the middle of the site and covers approximately 1.09 acres. This wetland area appears to occasionally support standing water during the growing season.

Other wetlands on the site include a small seasonal wetland (Wetland I) covering 0.03-acre and Wetlands B, C, and D that occur on the southern portion of the site. Wetland B is the largest of these areas (measuring 4.0 acres) and during the rainy season supports standing water in the eastern portion where it connects to a small ditch that drains to the ditch adjacent to the railroad tracks east of the project site. Wetlands C and D (covering 0.08 and 0.39-acre respectively) are located north of Wetland B.

Wetlands E through H occur on the southern portion of the site just east of Highway 101. These areas range in size from 0.07 to 3.51 acres as shown on Figure 1.

Wetland J is located on the eastern edge of the property, running parallel to the SMART rail tracks. Wetland J is 0.83 acres in size.

A small pond that supports several feet of standing water is located at the northwestern edge of Wetland H and is connected to drainage ditch DD2 (which is tidally influenced) via a small culvert that passes under a levee road. Wetlands A through I cover about 10.06 acres.

On the adjoining Conveyor Corridor site where offloading and conveyance facilities will be built, there is a seasonal wetland of approximately 0.47 acre. This wetland was created several years ago as part of a mitigation plan for earlier activities unrelated to Dutra or the proposed project. The wetland has not achieved all of the performance criteria prescribed in the earlier mitigation plan, but as confirmed by the Corps on December 14, 2010, it is a wetland meeting the Corps' criteria for identification of wetlands.

Remnant Slough and Coastal Brackish Marsh

One remnant slough occurs on the parcel east of the railroad tracks and measures approximately 110 feet in length and approximately 6-8 feet in width. It covers an area of approximately 0.02 acre.

In addition, approximately 200 linear feet of coastal brackish marsh averaging about 20 feet wide occurs on the eastern boundary of this parcel directly adjacent to the river. It covers an area of approximately 0.10 acre.

5.0 DESCRIPTION OF PROPOSED PROJECT AND FILL OF WATERS OF THE UNITED STATES

5.1 Project Background

The Dutra Group's materials business is structured around the efficient and cost-effective transportation of aggregate materials by barge within the San Francisco Bay Area and Sacramento River Delta. As the Northern California's population continues to grow, congestion on our cities' roadways and regional transportation corridors are increasing at an unsustainable rate. Congestion delays negatively impact delivered aggregate costs, thereby driving up the cost of construction projects in the region. Aggregate has an inherently low value to weight ratio and as such, the cost of transportation is a significant portion of the delivered cost. Dutra's business model reduces this transportation cost element by transporting aggregates via its marine fleet. The company's primary aggregate source is located on the San Pablo Bay and is the only hard rock quarry in Northern California with the ability to directly load barges. Dutra's marine fleet of barges, derricks, and tug boats is an integrated part of this model, providing cost efficient and environmentally friendly movement of aggregate throughout Northern California. The former Petaluma Temporary Plant utilized this integrated business model, bringing aggregates sourced from Dutra's San Rafael Rock Quarry, up the Petaluma River on Dutra's flat deck barges, pushed by Dutra's tug boat the Sarah Reed. The Haystack Plant fits seamlessly into this business model and will provide Southern Sonoma and Northern Marin County with a cost competitive supply of aggregate and asphalt.

Dutra first applied to the County of Sonoma in 2004 for approval of various land use entitlements needed for construction and operation of an asphalt plant on the project site. In its resolution approving the project in 2010, the County provided a description of the history of the application, environmental review, and approval process. That description offers useful background for understanding the development and analysis of alternatives in this Alternatives Analysis, and so is presented in its entirety here:

Section 1.

Application and Original Proposed Project.

1.0 On April 29, 2004, Dutra Materials ("Applicant"), filed an application with the Sonoma County Permit and Resource Management Department ("P.R.M.D.") for the approvals and land use entitlements necessary to construct and operate an asphalt batch plant with a maximum production capacity of 225,000 tons per year, an aggregate distribution facility with a maximum annual export capacity of 439,175 tons, and a concrete and asphalt recycling facility with a maximum annual production/capacity of 150,000 tons ("the Original Project") on three parcels totaling 38 acres located at 3355 Petaluma Boulevard South, Petaluma, APNs 019-220001, 019-320-022 and 019-320-023; zoned M2 (Heavy Industrial) B8 (Frozen Lot), F2 (Floodplain), BR (Biotic Resource) and LC (Limited Commercial), HD (Historic District), SR (Scenic Resources), SD (Scenic Design), F2 (Floodplain); Supervisorial District No.2 ("the Project Site").

The Original Project would have resulted in a facility with a total capacity of 664,175 tons per year with the inclusion of asphaltic oils and crumb rubber, and would have included new dock facilities on the Petaluma River to receive barged sand and aggregates.

The Original Project would have required 1) a General Plan Land Use Amendment on Assessor Parcels 019-320-022 and 019-320-023 from Limited Commercial to Limited Industrial; 2) a Petaluma Dairy Belt Area Plan Land Use Amendment on Assessor Parcels 019-320-022 and 019-320-023 from Limited Commercial to Limited Industrial; 3) a Zone Change on Assessor Parcels 019-320-022 and 019-320-023 from LC (Limited Commercial), HD (Historic District), SR (Scenic Resources), SD (Scenic Design), F2 (Floodplain) to M3 (Limited Rural Industrial), SR (Scenic Resources), SD (Scenic Design), F2 (Floodplain); and 4) a Use Permit with Design Review.

Section 2. Procedural History.

2.1 The P.R.M.D. determined that an environmental impact report ("EIR") was required for the Original Project to comply with the California Environmental Quality Act ("CEQA") and the State CEQA Guidelines. The County contracted with Christopher A. Joseph and Associates ("CAJA") to prepare the EIR. In addition to CAJA, the environmental study team included Baseline Environmental Consulting ("the EIR Hydrogeologist/Geologist and Environmental Health Specialists"), Dowling Associates, Inc. ("the EIR Traffic Consultant"), Environmental Collaborative ("the EIR Biologist"), and Tom Origer and Associates ("the EIR Archaeologist").

2.2 The County circulated a Notice of Preparation ("Nap") for the required EIR to the Office of Planning and Research, State Clearinghouse, each responsible and trustee agency, and interested agencies and persons on February 17, 2006. P.R.M.D. staff held a public scoping meeting for the required EIR on February 27, 2006.

2.3 A draft EIR ("the Draft EIR") was completed for the Original Project and a Notice of Completion filed with the Office of Planning and Research on January 14, 2008. The Draft EIR considered comments received on the Nap and at the public scoping meeting. The Draft EIR was made available for public and agency review and comment on January 14, 2008.

2.4 The Sonoma County Planning Commission ("the Planning Commission") conducted a duly noticed public hearing on the Draft EIR on February 7, 2008. At the hearing, the Commission heard and received all relevant oral and written testimony and evidence presented or filed, and considered the Draft EIR. All interested persons were given the opportunity to hear and be heard. At the conclusion of public testimony, the Planning Commission extended

the DEIR public review period to March 4, 2008 and continued the public hearing to March 6, 2008.

2.5 The Planning Commission reopened the public hearing on the Draft EIR on March 6, 2008. At the conclusion of public testimony, the Commission closed the hearing and gave its comments on the Draft EIR.

2.6 A response to comments document entitled "Final Environmental Impact Report" ("Response to Comments Document" or "RTC Document") was completed for the Proposed Project on July 18, 2008. The RTC Document was released to the public and provided to all responsible and commenting agencies.

2.7 The Planning Commission conducted a duly noticed public hearing on the EIR and the Original Project on August 21, 2008. At the hearing, the Planning Commission heard and received all relevant oral and written testimony and evidence presented or filed regarding the EIR and Original Project. All interested persons were given the opportunity to hear and be heard. At the conclusion of the public testimony, The [sic, the] Planning Commission closed the public hearing, discussed the EIR and Original Project, and continued the item to October 16, 2008.

2.8 The Bay Area Air Quality Management District ("BAAQMD") issued a Health Risk Screening Analysis ("HRSA") on October 2, 2008, finding that air emissions associated with the Original Project posed no significant health risk.

2.9 On October 16, 2008, the Planning Commission again discussed the EIR and Original Project and, on a 3-1-1 vote, adopted Resolution No. 08-032 recommending that the Board certify the EIR, adopt a statement of overriding considerations, and approve the Original Project.

2.10 P.R.M.D. staff prepared and distributed a memorandum to the Board ("the December 9, 2008 P.R.M.D. Staff Memorandum to the Board") summarizing the Planning Commission's proceedings and action on the EIR and Original Project. P.R.M.D. staff attached its August 21, 2008 and October 16, 2008 staff reports to the Planning Commission and other relevant documents to the memorandum for the Board's review.

2.11 On December 8, 2008, County staff and the Board received a 242-page letter with 12 exhibits from Lozeau/Drury LLP, representing the Petaluma River Council and five Petaluma residents. With consent of the Applicant, the Board continued the item from December 9, 2008 to February 3, 2009 to allow staff and the Applicant time to review the late submittal.

2.12 P.R.M.D. staff prepared and distributed a second memorandum to the Board ("the February 3, 2009 P.R.M.D. Staff Memorandum to the Board")

again summarizing the Planning Commission's proceedings and action on the EIR and Original Project, and responding to the issues raised in the late comments from Lozeau/Drury. P.R.M.D. staff attached all relevant documents to the memorandum for the Board's consideration, including an 18-page response to the Lozeau/Drury letter prepared by CAJA (Jan. 19, 2009).

2.13 The Board conducted a duly noticed public hearing on the EIR and the Original Project on February 3, 2009. At the hearing, the Board heard and received all relevant oral and written testimony and evidence presented or filed regarding the EIR and the Proposed Project. All interested persons were given the opportunity to hear and be heard. At the conclusion of public testimony, the Board closed the hearing, discussed the EIR and the Proposed Project, and, on a 4-1 straw vote, voted to certify the EIR, adopt a statement of overriding considerations, and approve the Original Project with several changes to the conditions of approval. To ensure consistency with the General Plan, the Board referred to the Planning Commission a possible General Plan text amendment to add a Planning Area Policy to the Land Use Element to establish maximum allowable noise levels and limit the number of events that could exceed the noise standards contained in Table NE-2 of the Noise Element. The Board then continued the matter to March 24, 2009.

2.14 At the request of the Applicant, the Planning Commission continued the item from March 5, 2009 to April 16, 2009. P.R.M.D. staff prepared and distributed a memorandum to the Planning Commission ("the April 16, 2009 P.R.M.D. Staff Memorandum to the Planning Commission"). In the April 16, 2009 P.R.M.D. Staff Memorandum to the Planning Commission, P.R.M.D. staff recommended that the Planning Commission hold a public hearing and recommend that the Board approve the General Plan text amendment. P.R.M.D. staff attached all relevant documents to the memorandum for the Planning Commission's review, including additional noise analysis prepared by Rosen Goldberg Der & Lewitz, Inc.

2.15 On April 16, 2009, the Planning Commission conducted a duly noticed public hearing on the General Plan text amendment, including the additional noise analysis. All interested persons were given the opportunity to hear and be heard. At the conclusion of the public testimony, the Planning Commission closed the public hearing, discussed the EIR and Original Project, and continued the item to May 21, 2009.

2.16 On May 21, 2009, the Planning Commission discussed and considered the General Plan text amendment, and voted 3-2 to recommend that the Board approve the proposed policy.

2.17 The Board continued its discussion of the matter from March 24 to May 12, 2009, and then from May 12 to June 9, 2009, to allow the Planning Commission to adequately analyze the issue.

2.18 On June 9, 2009, the Board reopened the public hearing, considered the Planning Commission's recommendation and received public comment on the General Plan Planning Area Policy. All interested persons were given the opportunity to hear and be heard. At the conclusion of public testimony, the Board closed the public hearing, deliberated, and, on a 3-2 straw vote, voted to deny the Original Project. The Board instructed staff to prepare a resolution for denial of the Original Project, but also to revise the draft conditions of approval to include several changes for the Board's consideration. The Board continued the matter to July 21, 2009.

2.19 Prior to July 21, 2009, the Applicant requested that the Board allow it to revise the Original Project to address concerns regarding noise, air emissions and aesthetic impacts. The Applicant specifically proposed (1) reducing peak production by 25 percent, from 400 tons per hour to 300 tons per hour; (2) reducing the height of the silos by 18 percent, from 76 feet to 62 feet; and (3) eliminating the on-site crushing of recycled material.

2.20 The Board considered this proposal on July 21, 2009 and, on a 3-2 vote, voted to continue the item off-calendar. The Board directed staff to prepare an analysis of the environmental impacts of a revised project.

2.21 The Applicant submitted a letter dated August 3, 2009 letter (revised on August 28 and September 15, 2009) proposing a revised project ("the Revised Project") with revisions consisting of:

- An approximately 14 percent reduction in overall annual exporting capacity of the facility, by 93,750 tons from 664,175 to 570,425 tons per year;
- The elimination of all on-site recycling and crushing operations and a reduction in the use of recycled asphalt product ("RAP") from 150,000 to 56,250 tons per year;
- A 25% reduction in peak hourly asphalt production from 400 to 300 tons per hour, allowing for a smaller gas-fired burner on the asphalt production unit;
- An 18% reduction in the height of the two asphalt storage silos from 76 to 62 feet and a resulting reduction in the storage capacity of the silos from 200 to 100 tons; and
- Reuse of the recycling area for vehicle and equipment storage.

2.22 BAAQMD conducted an independent analysis of the potential health risks associated with the Revised Project, and issued a Refined Health Risk

Assessment (“RHRA”) on September 21, 2009. The RHRA determined that air emissions associated with the Revised Project posed no significant health risk.

2.23 The County approved a contract amendment for CAJA to prepare an analysis of the environmental impacts of the Revised Project. CAJA undertook an in-depth evaluation and analysis of all the potential environmental impacts of the Revised Project compared with those that would have resulted from the Original Project, and submitted a Summary Report for Revised Dutra Asphalt and Recycling Facility Project dated November 20, 2009 (“Summary Report I”). Summary Report I determined that the changes proposed as part of the Revised Project would reduce environmental impacts related to aesthetics, air quality, hydrology and water quality, noise, and transportation/traffic below those that would have resulted from the Original Project.

2.24 P.R.M.D. staff prepared and distributed a memorandum to the Board (“the December 8, 2009 P.R.M.D. Staff Memorandum to the Board”). In the December 8, 2009 P.R.M.D Staff Report to the Board, P.R.M.D. staff summarized the Revised Project, the findings of Summary Report I, and all other relevant information, including BAAQMD’s Refined Health Risk Assessment.

2.25 The Applicant requested a continuance of the December 8, 2009 Board hearing to address concerns raised by the United States Coast Guard regarding the possible encroachment of docked barges into the Petaluma River Navigable Channel. The hearing was continued several times to allow the Applicant to submit additional information, and to allow staff to conduct additional analysis of the potential environmental impacts of project changes.

2.26 In letters dated January 29, April 8, and June 10, 2010, the Applicant proposed to further revise the Revised Project to:

- Eliminate the barge docking facilities and off-loading equipment from the parcel (“Area A”) along the Petaluma River;
- Import up to 500,000 tons per year of sand and aggregates from the existing adjacent Landing Way Depot facility at 210/222 Landing Way. The materials would be barged to the Landing Way Depot facility, within the import limit imposed by that facility’s existing Use Permit UPE03-011 0, and conveyed to the Project Site by a proposed conveyor system (“conveyor option”) or by trucks (“trucking option”).
- Reconfigure the aggregate piles, asphalt batch plant, scales, and on-site traffic circulation pattern to better accommodate a proposed new Highway 101 interchange, frontage road, and access road for properties along the river.

- Redesign a previously proposed 16-foot-high sound wall to encompass all the aggregate piles, obviating the need for a gate on the access road.

2.27 The County contracted with the EIR Project Manager, Geoff Reilly, and his new firm, WRA Environmental Consultants (“WRA”) to undertake a further analysis of the potential environmental impacts of the project as revised (“Revised Project II”) as compared to those that would have resulted from the Original Project. WRA conducted another independent, in-depth evaluation and analysis of all potential project impacts, and prepared a 46-page Summary Report II for the Revised Dutra Haystack Landing Asphalt Facility Project (Revised Project II) (September 24, 2010) (“the Summary Report II”). The Summary Report II determined that the Revised Project II would:

- Substantially reduce aesthetic impacts of the Original Project by eliminating the barge docking facilities, all on-site recycling and crushing equipment, and stockpiles of recycled materials; reducing the height of the silos; and increasing the effectiveness of proposed landscaping.
- Reduce emissions of air pollutants by 19 to 30 percent from the Original Project through the changes proposed in the Revised Project, and further reduce air emissions through Revised Project II. The Summary Report II explained that the conveyor option would result in fewer emissions than the trucking option.
- Reduce impacts to biological resources by eliminating the barge off-loading facility and recycling operations, and avoid impacts associated with development of the conveyor option by requiring purchase of wetland mitigation credits at the Burdell Ranch Wetland Conservation Bank.
- Reduce impacts to hydrology and water quality by eliminating the barge offloading facilities, the recycling operations, and construction in the Petaluma River, and improving floodplain storage.
- Reduce noise impacts from the Original Project from significant and unavoidable to less than significant, and eliminate the need for the recommended General Plan text amendment to add a Planning Area Policy to the Land Use Element, by eliminating the recycling operations and barge docking and unloading facilities, and associated tugboat noise and diesel equipment to unload the barges. As a result, noise generated by the Revised Project II will be less than that generated by the Original Project, and will not exceed any noise standards in the County General Plan 2020.

- Reduce transportation and traffic impacts by eliminating recycling operations and thus reducing truck trips by 19 percent as part of Revised Project I, if the conveyor option was chosen as part of Revised Project II.

As documented in the Summary Report II, the Revised Project II would not result in any new significant impacts, any substantial increase in the severity of any previously-identified significant impacts, or any new, feasible alternatives or mitigation measures the Applicant declines to adopt, nor otherwise trigger recirculation of the Final EIR. Instead, the Revised Project II would result in fewer significant unavoidable impacts and significantly reduced adverse impacts overall as compared with the Original Project.

2.28 P.R.M.D. staff prepared and distributed a memorandum to the Board (“the October 12, 2010 P.R.M.D. Staff Memorandum to the Board”). In the October 12, 2010 P.R.M.D. Staff Report to the Board, P.R.M.D. staff summarized the Revised Project II and the findings of Summary Report II, and provided all other relevant information. P.R.M.D. staff recommended that the Board certify the EIR, adopt a Statement of Overriding Considerations, and approve:

- an amendment to the Land Use Element of General Plan 2020 (“General Plan Amendment” or “General Plan Land Use Amendment”) and Petaluma Dairy Belt Area Plan Land Use Amendment on APNs 019-320-022 and -023 from Limited Commercial to Limited Industrial;
- a Zone Change on APNs 019-320-022 and -023 from LC (Limited Commercial), HD (Historic District), SR (Scenic Resources), SD (Scenic Design), F2 (Floodplain), to M3 (Limited Rural Industrial), SR (Scenic Resources), SD (Scenic Design), F2 (Floodplain);
- a Use Permit with Design Review for an asphalt batch with a maximum production capacity of 225,000 tons per year and an aggregate and sand distribution facility with a maximum annual export capacity of 345,425 tons, resulting in a facility with a total capacity of 570,425 tons per year with the inclusion of asphaltic oils and crumb rubber. The project would import, by means of a conveyor system, up to 500,000 tons per year of aggregates and sand from the adjacent existing barge off-loading and aggregate distribution facility at 210/222 Landing Way.

This project (“the Proposed Project”) would be subject to the final conditions of approval.

2.29 The Board conducted a duly noticed public hearing on the Final EIR and the Proposed Project on October 12, 2010. At the hearing, the Board heard and received all relevant oral and written testimony and evidence presented or filed regarding the Final EIR and the Proposed Project. All interested persons were given the opportunity to hear and be heard. At the conclusion of public testimony, the Board closed the hearing, discussed the Final EIR and the Proposed Project, and, on a 3-2 straw vote, voted to certify the Final EIR, adopt a Statement of Overriding Considerations, amend the General Plan and Petaluma Dairy Belt Area Plan, and approve the Zone Change, Use Permit, and Design Review Permit. The Board continued the item to December 14, 2010, and directed staff to return to the Board with resolutions reflecting the Board's consideration and determination.

2.30 The Board has had an opportunity to review this resolution and finds that it accurately sets forth the intentions of the Board regarding the Final EIR and Proposed Project.

(Sonoma County Board of Supervisors, Resolution No. 10-0916, pp. 1-7.)

In February 2011, following the County's adoption of resolutions approving the Revised Project II, certification of the FEIR, and adoption of a Statement of Overriding Considerations, the City of Petaluma, Petaluma River Council, and others filed a petition for writ of mandate challenging County's approval of the project. In December 2011, the Superior Court denied the petition. The petitioners appealed, and on February 28, 2014, the Court of Appeal affirmed the Superior Court's judgment denying the petition and upholding the County's approval of the project.

On December 15, 2014, Dutra Materials applied to the Corps for a permit under section 404 of the Clean Water Act and requested certification from the Regional Board under section 401 of the Act. The Corps issued a public notice on September 15, 2015. The Regional Board issued a public notice on December 10, 2015. Public comments were received, and Dutra Materials submitted an Alternatives Analysis on October 11, 2016. The Regional Board issued an additional public notice on October 18, 2016. Comments were received, and the Regional Board wrote to Dutra Materials on November 10, 2016, requesting additional information.

5.2 Proposed Project

The proposed project consists of the construction and operation of a counter-flow drum mix asphalt plant with a maximum production capacity of 225,000 tons per year, an aggregate and sand distribution facility with a maximum annual export capacity of 345,425 tons per year, a training, maintenance and storage facility for the San Antonio Volunteer Fire Department, an offloading conveyor tied to the existing barge offloading facility located on an adjacent parcel, and the restoration and preservation of 19 acres of wetlands, brackish marsh and open space.

The proposed project will employ five full-time and five part-time employees. Normal operating hours will be Monday through Friday from 7:00 a.m. to 5:00 p.m., except when necessary to meet the scheduling requirements of public projects, when the plant may operate 24

hours, 7 days per week. The offloading and conveyor facilities are permitted to operate only during daytime hours between sunrise and sunset, and up to six nights per year between September 1st and February 14th.

For discussion purposes in its environmental review and permitting process, the County has usefully identified four distinct areas of the site, Areas A, B, C, and D. See Figure 11.

Area A

Area A comprises approximately 0.8 acre located on the western shoreline of the Petaluma River. The originally proposed project located a barge offloading facility on a fixed pier and mooring dolphins within this area. During the CEQA review process, it was determined that barges moored at the proposed Area A offload would encroach into the navigable channel. The project was subsequently revised and the offload was moved from Area A to the existing offload at the Shamrock Landing Way facility. As currently proposed, the conveyor from the Shamrock Landing Way facility to the Haystack Asphalt Plant site would cross Area A, rising in height prior to crossing the SMART rail, then transverse Area B to Area C where it eventually terminates.

Area B

Area B is generally made up of a small hillside. The proposed project shows the conveyor run through Area B parallel to the SMART tracks prior to depositing aggregates into stockpiles located in Area C. The project shows the San Antonio Volunteer Fire Department's storage and maintenance facility located at the foot of the hill located in Area B.

Area C

Area C represents the bulk of the operational portion of the proposed project. The counter-flow drum mix asphalt plant, storage tanks, silos, control shack, truck scales, and associated equipment will be located within Area C. Stockpiles containing feed aggregates will also be stored within Area C.

Area D

Area D represents the portion of the project where wetland restoration and preservation would occur.

Shamrock Landing Way

The Shamrock Landing Way Aggregate Distribution Facility is located at 210 and 222 Landing Way on approximately seven acres adjacent to the Petaluma River. The site consists of an offloading facility on the west bank of the river where aggregate materials are transported by barge and then off-loaded by an E-crane which deposits the materials into aggregate stockpiles for sale. These materials are then loaded onto commercial trucks for use in Marin and Sonoma counties. Of the seven acres, a parcel comprising 2.14 acres and constituting the Conveyor Corridor will be created on which the conveyor system to transport material from the Shamrock Landing Way offload facility to the Haystack Asphalt Plant will be located.

5.3 Wetland Impacts and Proposed Mitigation

The proposed project would affect about 1.84 acre of seasonally inundated wetlands. Of the 12.17 acres of wetlands on the site, over 10 acres will be avoided with project implementation. Construction and operation of the proposed asphalt plant will result in the filling of approximately 1.37 acre of seasonally inundated wetland on the project site. In addition, construction and operation of facilities to offload and convey aggregate materials from barges at the nearby existing Shamrock off-loading facility on the Petaluma River to the proposed asphalt plant will involve decommissioning and removing an underperforming mitigation wetland of approximately 0.47 acre on the Conveyor Corridor site for installation of piers to support the overhead conveyor system and providing access to the piers and conveyor system for monitoring and maintenance.

To mitigate these impacts, Dutra has proposed a mitigation plan calling for a combination of creation, enhancement, and preservation of wetlands and upland buffers on a 17-acre portion of the site, as well as some off-site measures.

Prior to construction of the Northwestern Pacific railroad tracks in the late 1800s and early 1900s, it appears nearly all of the southern 17 acres of the 35-acre Haystack site was coastal brackish marsh habitat associated with the Petaluma River corridor¹. Construction of the railroad track, which runs parallel and west of the Petaluma River, impeded normal hydrologic and tidal flows to the brackish marsh and its sloughs located to the west of the track². Despite this impediment, review of historic aerial photographs and historic topographic maps suggests that since the railroad was constructed, much of the area remained wetland until about 1968 when the area was converted to quarry wash water ponds. The wetland areas continued to provide limited wetland functions until the quarry wash water ponds were abandoned sometime in the early 1990s. In the mid-1990s, a formal wetland delineation was conducted³ identifying much of the area as jurisdictional wetland, which remains the case today.

The total wetland area currently existing within the 17-acre mitigation area is 9.17 acre or 53 percent of the area. Conversion of 2.66 acres of upland to wetland as part of the proposed mitigation project would result in approximately 70 percent of the mitigation area being wetland. Therefore, construction of new wetlands and enhancement of converted wetlands will restore and improve wetland functions and values in an area that has historically been predominantly wetland.

The proposed mitigation program calls for a total of 10.93 acres of enhanced and created wetland habitat designed to mitigate impacts on wetlands resulting from the proposed project. In addition, a section of coastal brackish marsh fronting the Petaluma River on Parcel B (Barton Property) will be restored.

¹ Aerial photograph review on-line, Photoscience, May 27, 2015. Aerial photograph review on-line, historicaerials.com.

² Balance Hydrologics, 204. Preliminary Hydrologic Evaluation of Wetland Restoration Potential at Haystack Landing, Petaluma, California. October.

³ LSA Associates, Inc. 1995. *Determination of Corps Jurisdictional Area, Haystack Landing, Petaluma.*

To complement the wetland creation and enhancement projects, an additional 2.54 acres within the wetland mitigation area on the 35-acre parcel will be planted with native trees and shrubs to provide wildlife habitat and to serve as a natural buffer to the proposed asphalt industrial facility. Another 0.29 acre of upland buffer will be planted with native trees and shrubs on the Landing Way site. This buffer will be on the east side of the Landing Way property along an existing earthen berm that will provide a buffer between the loading facility and the coastal brackish marsh associated with the Petaluma River.

With the exception of the restored section of marsh fronting the Petaluma River and the Landing Way buffer enhancement, the proposed wetland mitigation project will occur on approximately 17 acres on the southern portion of the 35-acre Haystack site. The reasons this portion of the site was selected as the optimal location for the mitigation preserve are as follows:

- 1) To locate the asphalt facilities on primarily upland habitats north of this area thereby avoiding over 90 percent of the wetland habitats on the 35-acre site, and
- 2) To create new seasonally inundated wetland habitat and enhance degraded wetland habitat as a bay-fringe mosaic in an area adjacent to tidal sloughs and wetlands associated with the Petaluma River corridor (see Plate 2).
- 3) To "restore" an area that was historically coastal brackish marsh but filled in the 1960s for construction of quarry silt ponds to a higher quality seasonally inundated wetland environment.

The proposed mitigation project would include the following:

- creation of 2.66 acres seasonally inundated wetland
- enhancement of 8.27 acres seasonally inundated wetland
- restoration of 0.02 acres of brackish marsh fronting the Petaluma River
- preservation of 0.90 acre seasonally inundated wetland
- enhancement of 3.29 upland buffer zone

In total, the proposed mitigation would compensate for wetlands-related impacts resulting from construction and operation of the asphalt plant at greater than a 3:1 replacement ratio⁴ with the goal of creating improved wetlands functions and values on the project site.

6.0 METHOD OF ANALYSIS OF ALTERNATIVES

Under the Guidelines, an analysis of alternatives should be thorough, yet manageable and within the reasonable range of alternatives analyzed under NEPA. (45 Fed. Reg. 85336, 85339-85340 (1980); *Simmons v. U.S. Army Corps of Eng'rs*, 120 F.3d 664, 669 (7th Cir. 1997).) Upholding a Corps decision to consider seven alternative sites within a fairly limited geographical area, a Court of Appeal recently explained:

⁴ The replacement ratio was calculated assuming full credit for the creation of 2.66 acres of seasonally inundated wetland habitat and 50% credit for the enhancement of 8.27 acres of existing wetland habitat

There is no magic number of alternatives the Corps must consider for its analysis to be acceptable, but the agency must draw the line somewhere, even when § 230.10(a)(3)'s presumption applies. "There will always be more data that could be gathered; agencies must have some discretion to decide when to draw the line and move forward with decisionmaking." *Habitat Educ. Ctr., Inc. v. U.S. Forest Serv.*, 673 F.3d 518, 531 (7th Cir. 2012) (quoting *Town of Winthrop v. FAA*, 535 F.3d 1, 11 (1st Cir. 2008)).

(*Hillsdale Environmental Loss Prevention, Inc. v. U.S. Army Corps of Eng'rs*, 702 F.3d 1156, 1170-1171 (10th Cir. 2012).)

In the manner more particularly described below, Dutra reviewed the DEIR and other available information and, using the criteria prescribed in the Guidelines, identified and screened alternatives, both off-site and on-site, and developed eight off-site alternatives and two on-site alternatives for more detailed evaluation and discussion in this Alternatives Analysis.

7.0 ANALYSIS OF OFF-SITE ALTERNATIVES

7.1 Initial Screening of Potential Alternative Sites

The overall project purpose was used to focus initial review of potential alternative sites on those within the general geographic area to be served by the proposed project, northern and western Marin County and northern Sonoma County.

Potential alternative sites were further reviewed based on capability to achieve overall project purpose, availability, effects on aquatic resources, practicability, and other significant environmental consequences to screen out those obviously unsuitable as alternatives and identify those most suitable for closer analysis. One of these alternatives was Schollenberger Park which was analyzed by the County in its DEIR. The site is located across the river from the Shamrock Landing Way Facility and the project site. This alternative was eliminated from further analysis because it is a public park consisting primarily of coastal brackish marsh habitat, so it affords no opportunity for constructing and operating a project with less adverse impact on the aquatic ecosystem.

This initial screening identified eight potential alternative sites for further analysis. Five of these sites (Port Sonoma, Redwood Landfill, Downtown Petaluma, Lakeville Highway, and Temporary Dutra Site) were also identified and discussed as potential alternatives in the DEIR (DEIR at VII-5 to VII-6); two other sites (Sonoma County Landfill and Pomeroy Site) were added to the County's analysis as a result of comments on the DEIR (Resolution Ex. D, pp. 8-10); another site (East of Pomeroy Site) was added through this initial screening. Each is discussed below with respect to meeting the requirements of the Guidelines regarding capability to achieve the overall project purpose, availability, impacts on the aquatic ecosystem, practicability, and other significant environmental consequences.

7.2 Criteria for Analysis of Alternative Sites

7.2.1 Project Purpose

In order to enable achievement of the overall project purpose, a site must allow for the construction and operation of a commercially competitive asphalt processing facility with access to a navigable waterway to provide asphalt, aggregate, sand, and related products for public and private construction projects in northern and western Marin County and southern Sonoma County.

Specific criteria used to determine whether a site allows for achievement of the overall project purpose are:

- **Location in Market Area**

Is the site located in the vicinity of northern and western Marin County and southern Sonoma County such that it could serve to provide asphalt, aggregate, sand, and related products for public and private construction projects in that area? The site should be located within the market area to be served.

- **Suitable Size and Configuration**

Is the site of a size, shape, and topographic nature suitable for construction and operation of a commercially competitive asphalt processing facility? The site should contain at least five and as many as ten contiguous developable acres of land to accommodate the plant, associated outbuildings, stockpile areas, and truck access, loading, and parking areas. Stockpiles are limited to a height of 20 feet, which requires the foot print of the stockpiles to expand to a sufficient size to store an appropriate amount of material taking into account the plant's production capacity, sales, and inventory replenishment. The quantity of inventory on site should be able to sustain operations for approximately three to four days during the busy season. The plant is permitted to produce 300 tons per hour, and in the busy season could sell approximately 5000 tons of materials per day. Given these requirements, the stockpiles alone require approximately 2.45 acres. The asphalt plant structure requires approximately 1.2 acres of land; equipment storage requires roughly 1 acre; and the truck scale and office requires about 0.25 acres. The total acreage required for these features, even without any additional room for roadways, water control structures, and other appurtenances thus is 4.9 acres. Five acres thus is the minimum size of a potential alternative site, assuming its configuration and topography are suitable. Ten acres is the maximum size of a potential site since that is ample acreage for an alternative asphalt plant, and even more acreage would just be unreasonable and wasted excess.

- **Access to Navigable Waterway**

Does the site afford access to a navigable waterway enabling transport of asphalt, aggregate, sand, and related products to and from the site? The site should be

accessible to a navigable waterway 200 feet wide with 12 feet draw to allow barges to maneuver and transport material.

- **Access to Transportation Infrastructure**

Does the site afford access to roads and highways enabling transport of asphalt, aggregate, sand, and related products to and from the site? The site should be located on or near a road suitable for heavy truck traffic leading within five miles to a U.S. Highway 101 interchange. Location within a short distance to Highway 101 is important as it represents the artery through the market area and, in general, the majority of the infrastructure located within southern Sonoma County and northern Marin County is located within this band.

7.2.2 Availability

The Guidelines call for evaluation of potential alternative sites even if “not presently owned by the applicant” provided they are “available” and “could reasonably be obtained, utilized, expanded, or managed” in order to accomplish the project purpose. (40 C.F.R. § 230.10(a)(1) & (2).)

The availability of a site as an alternate location for a proposed project rests on various considerations, depending on circumstances, including whether a site may reasonably be obtained by purchase or long term lease, whether use of the site as an alternative to the proposed project is consistent with applicable laws and regulations, and whether such use may reasonably be permitted by all necessary government agencies within a reasonable time for such a project. (E.g., *Northwest Environmental Defense Center v. Wood*, 947 F.Supp. 1371, 1378 (D. Or. 1996), a relevant consideration is that rezoning of other sites would not be practicable.)

- **Availability**

Is the site available for sale or long term lease? Is use of the site as an alternative to the proposed project consistent with applicable laws and regulations? The site should be available for purchase or lease at a reasonable cost for use as an asphalt processing facility.

7.2.3 Aquatic Ecosystem Impacts

The Guidelines call for an applicant to demonstrate that there are no practicable alternatives to the proposed discharge that “would have less adverse impact on the aquatic ecosystem” and does not have other significant adverse environmental consequences. By this reference to the “aquatic ecosystem,” the Guidelines call for a qualitative, and not merely quantitative, evaluation of pertinent impacts. The Guidelines define “aquatic ecosystem to mean “waters of the United States, including wetlands, that serve as habitat for interrelated and interacting communities and populations of plants and animals.” (40 C.F.R. § 230.3(c).) Analysis of alternative sites thus should consider effects on the aquatic ecosystem with respect to the habitat it provides for interrelated and interacting communities and populations of plants and animals.

Specific criteria used to determine potential impacts on the aquatic ecosystem resulting from development of an alternative site are:

- **Impacts on Waters of the United States Serving as Habitat**

What impacts would development of the site have on waters of the United States? This impact may be expressed quantitatively, e.g., acreage or linear feet.

To what extent do the impacted waters of the United States serve as habitat for interrelated and interacting communities and populations of plants and animals? What would be the impact on such habitat? This impact may be expressed qualitatively as well as quantitatively.

7.2.4 Practicability (Cost, Logistics, and Technology)

The Guidelines call for evaluating whether a potential alternative site may serve as a “practicable” alternative for achieving the overall project purpose “taking into consideration cost, existing technology, and logistics.” (40 C.F.R. § 230.10(a)(1) & (2).)

The considerations pertinent to evaluating the practicability of an alternative site may be many and various depending on circumstances and may overlap in some respects with the considerations assessed in evaluating whether an alternative is available or whether it is capable of achieving the overall project purpose. Common considerations include the following.

- **Suitable Size, Configuration, and Topography**

Size, configuration, and topographic nature of site naturally may be considered in evaluating whether a site is a “practicable” alternative location for the proposed project. (As discussed earlier, such considerations also figure into evaluating whether the overall project purpose may be accomplished on a site.) The site naturally should not present constraints that preclude the design, construction, and operation of an asphalt processing facility.

- **Legal Constraints**

Use of the site for operation of an asphalt processing facility should be consistent with applicable laws and regulations. To the extent that applicable laws and regulations allow the possibility of such use of the site but require one or more permits or approvals to do so, such permits or approvals should be reasonably obtainable within a reasonable time.

- **Access to Navigable Waterway and Transportation Infrastructure**

The site should have reasonable access to a navigable waterway, e.g. the Petaluma River or San Francisco Bay, for barge transport and to transportation infrastructure, including Highway 101, for truck transport. (As discussed earlier, such considerations also figure into evaluating whether the overall project purpose may be accomplished on a site.)

- **Access to Other Infrastructure**

The site should have reasonable access to utilities necessary for operation of an asphalt processing facility.

- **Compatibility with Surrounding Land Uses**

The site should be situated such that its use for construction and operation of an asphalt processing facility would be compatible with surrounding land uses and would not conflict with such uses or create a nuisance owing to concerns about noise, aesthetics, air quality, health and safety, or similar considerations.

- **Cost**

The site should allow for construction and operation of an asphalt processing facility at a reasonable cost. In assessing the practicability of alternatives, the Corps naturally should consider cost and reject alternatives that are unreasonably expensive.

The Guidelines require the Corps, when analyzing the practicability of alternatives, to take “cost” into account, but do not specify how to do so. (40 C.F.R. § 230.10(a)(2).) In its preamble to the Guidelines, though, the EPA clarified: “Our intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project.” (45 Fed. Reg. 85335, 85339 (1980).) “If an alleged alternative is unreasonably expensive to the applicant, the alternative is not ‘practicable.’” (*Id.* at 85343.)

The EPA and Corps have elaborated that in assessing cost the Corps considers not the financial circumstances of a particular applicant, but rather what is typical and reasonable for the type of project under consideration. “The determination of what constitutes an unreasonable expense should generally consider whether the projected cost is substantially greater than the costs normally associated with the particular type of project. . . . It is important to emphasize, however, that it is not a particular applicant’s financial standing that is the primary consideration for determining practicability, but rather characteristics of the project and what constitutes a reasonable expense for these projects that are most relevant to practicability determinations.” (Corps of Engineers and EPA, Memorandum to the Field, Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements (Aug. 23, 1993); *see also Friends of the Earth v. Hintz*, 800 F.2d 822, 833-834, (9th Cir. 1986), illustrating the Corps’ consideration of cost metrics, *i.e.*, cost per unit of materials handled (logs), pertinent to the type of project, a log export handling yard; *Sierra Club v. Flowers*, 423 F.Supp.2d 1273, 1333, 1358 (S.D. Fla. 2006), faulting the Corps for not using a standard industry metric (rock yield per acre) in evaluating alternatives to a proposed rock mining operation.)

7.2.5 Other Significant Environmental Consequences

The site should allow for construction and operation of an asphalt processing facility without causing other significant adverse environmental consequences, such as significant impacts to endangered species or habitats deemed particularly sensitive (like oak woodlands) or

any other aspect of the environment. The site should be situated such that its use for construction and operation of an asphalt processing facility would be compatible with surrounding land uses and would not conflict with such uses owing to concerns about noise, aesthetics, air quality, health and safety, or similar considerations.

The Guidelines call for evaluating whether alternatives would have “other significant adverse environmental consequences” (apart from those on the aquatic ecosystem) and generally prohibit a discharge if there is a practicable alternative having less adverse impact on the aquatic ecosystem “so long as the alternative does not have other significant adverse environmental consequences.” (40 C.F.R. § 230.10(a).) This provision establishes that “the existence of an alternative which is less damaging to the aquatic ecosystem does not disqualify a discharge if that alternative has other significant adverse environmental consequences.” (45 Fed. Reg. 85340 (1980).) It gives the Corps “an opportunity to take into account evidence of damage to other ecosystems in deciding whether there is a ‘better’ alternative.” (*Id.*)

7.3 Alternative Site A: Former Temporary Dutra Site

7.3.1 Description

Alternative Site A is the site of a former temporary asphalt plant operated by Dutra from 2005 to 2009 located at 1500 Petaluma Boulevard South adjacent to the Petaluma River approximately 300 feet upstream from a Highway 101 bridge over the river in Petaluma, California. The site comprises about two acres.

Surrounding land uses include Highway 101 to the east, the Petaluma River to the north, light industrial and residential uses to the west, and residential uses to the south.

A conceptual site plan of an asphalt plant on the site is depicted in Figure 3 below.

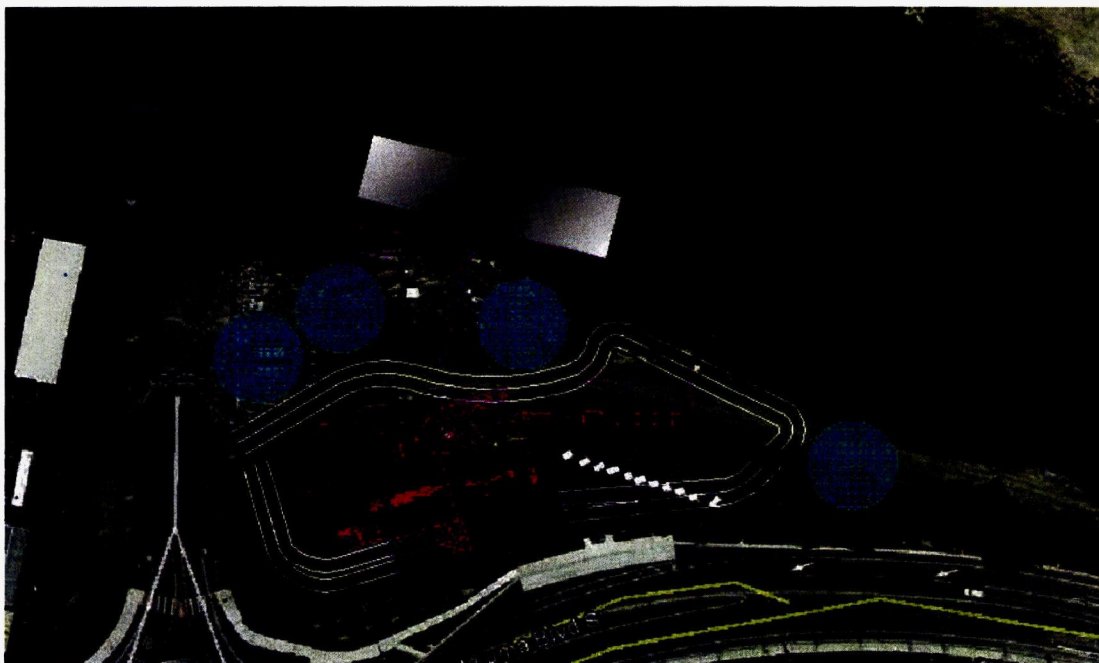


Figure 3 - Conceptual Site Plan - Alternative Site A

The site was evaluated as a potential alternative to the proposed project site by the County in its EIR, and for that reason is also analyzed here even though it could well have been set aside in the initial screening. The County concluded that the site was not a feasible alternative because “it is not of sufficient size to accommodate the proposed project” and the applicant had only a three-year lease on the site, which would not be extended. (DEIR at VII-6; Resolution Ex. D, p. 8.)

7.3.2 Overall Project Purpose

The site’s size is unsuitable for fulfilling the overall project purpose and falls outside the pertinent screening criterion of five to ten contiguous developable acres of land. The site is too small to allow for construction and operation of an asphalt processing facility serving the overall project purpose. The asphalt plant that Dutra operated on the site from 2005 to 2009 was of sufficient size to serve relatively small projects in the vicinity, and was not large enough to serve large projects of the sort to be served by the proposed project, e.g., large highway or road construction or resurfacing projects. It was for that reason that the plant was planned from the outset to be temporary.

The site does not provide enough storage area for the size and number of stockpiles required to meet the demand of large roadway and highway projects. Even with a reduced number of stockpiles, as shown in the conceptual site plan above, there is not sufficient room to provide for safe truck routes. The routes shown above encroach on the plant equipment footprint and do not provide any space for loader and equipment travel. Paving projects typically rely on the asphalt plant as a place to queue trucks waiting to be loaded with materials. These queues

vary in size depending on the project, its distance to the plant, and the quantity of material being hauled. On large highway and roadway projects, these queues can become as large as 20 trucks. In addition to the site being too small to handle the equipment, material storage, and truck routes, the site does not have enough room to queue trucks. This would require the trucks to queue elsewhere, adversely impacting the surrounding community.

7.3.3 Impacts on Aquatic Ecosystem

Construction of a facility at the site may have impacts on the aquatic ecosystem along the shore of the Petaluma River. About 10,000 cubic yards of material would need to be placed in or near the navigable channel in order to construct the bulk head required for offloading material from barges.

7.3.4 Availability

The privately owned site is not available for sale or long-term lease. Dutra contacted the owner of the site, inquired of its availability, and was told the site is not available for sale or lease. The owner's representative added that the site would not be compatible with an asphalt plant in any event due to the fact that it is in the final stages of annexation to the City of Petaluma for mixed use and the fact that there is residential housing directly across the street.

7.3.5 Practicability

At just two acres, the small size of the site is such that an asphalt processing facility that would achieve the overall project purpose could not practicably be constructed and operated at the site. The site does not provide enough storage area for the size and number of stockpiles required to meet the demand of large roadway and highway projects. Even with a reduced number of stockpiles, as shown in the conceptual site plan above, there is not sufficient room to provide for safe truck routes. The routes shown above encroach on the plant equipment footprint and do not provide any space for loader and equipment travel. Paving projects typically rely on the asphalt plant as a place to queue trucks waiting to be loaded with materials. These queues vary in size depending on the project, its distance to the plant, and the quantity of material being hauled. On large highway and roadway projects, these queues can become as large as 20 trucks. In addition to the site being too small to handle the equipment, material storage, and truck routes, the site does not have enough room to queue trucks. This would require the trucks to queue elsewhere, adversely impacting the surrounding community.

The site's location immediately adjacent to high-density residential uses presents an incompatibility with the surrounding land uses and a risk of generating complaints of nuisance by nearby residents. These residential uses were recently developed and expanded in the years since cessation of Dutra's operation of the temporary asphalt plant there.

7.3.6 Other Significant Adverse Environmental Consequences

Construction and operation of an asphalt processing facility at the site, located immediately adjacent to high-density residential uses, presents an incompatibility with the surrounding land uses and a risk of generating complaints of nuisance by nearby residents.

7.3.7 Conclusion

Alternative Site A is not a less environmentally damaging practicable alternative location for the proposed project under the Guidelines because (1) the site is unsuitable for construction and operation of an asphalt processing facility to achieve the overall project purpose, (2) construction and operation of an asphalt processing facility may have impacts on the aquatic ecosystem that are no less than those of the proposed project, (3) the site is not available, (4) construction and operation of an asphalt processing facility serving the overall project purpose on the site would be impracticable, and (5) construction and operation of an asphalt processing facility at the site would have other significant adverse environmental consequences.

7.4 Alternative Site B: Downtown Petaluma

7.4.1 Description

Alternative Site B is not a specific site, but rather an area within downtown Petaluma where one might imagine locating an asphalt processing plant. Properties along the waterfront in downtown Petaluma mostly consist of industrial and/or commercial property and new residential property or public parks, including Cedar Grove Park. This portion of Petaluma is approximately one-half mile to one mile west of Highway 101. The Northwestern Pacific Railroad line passes through downtown Petaluma from where it crosses under Highway 101 by the Petaluma River to where it parallels Hopper Street and Lakeville Street and extending north towards Rohnert Park from Payran Street. The area is depicted in an aerial photograph in Figure 4 below.



Figure 4 - Aerial Photo - Alternative Site B

This area was evaluated as a potential alternative to the proposed project site by the County in its EIR, and for that reason is also analyzed here even though it could well have been set aside in the initial screening. The County concluded that the area did not present a feasible alternative because “no property of suitable size could be identified” and “much of the waterfront in downtown Petaluma is being converted from industrial to commercial and/or residential mixed

uses and the proposed asphalt facility would be incompatible with these uses.” (DEIR at VII-5; Resolution Ex. D, p. 7.) Moreover, the County added, “[t]ruck traffic in the downtown area could create significant traffic congestion and safety hazards on local surface streets.” (*Id.*)

7.4.2 Overall Project Purpose

As no site of suitable size could be identified in the downtown Petaluma area, this area does not offer an alternative that would fulfill the overall project purpose.

7.4.3 Impacts on Aquatic Ecosystem

Construction of a facility at the site may have impacts on the aquatic ecosystem along the shore of the Petaluma River. About 10,000 cubic yards of material would need to be placed in or near the navigable channel in order to construct the bulk head required for offloading material from barges. Owing to the shallowness of the Petaluma River in this reach, some dredging would be necessary to allow for barge traffic.

7.4.4 Availability

Review of property along the river in downtown Petaluma has not revealed any sufficiently sized parcel available for sale or long-term lease.

7.4.5 Practicability

As no site of suitable size could be identified in the downtown Petaluma area, construction and operation of an asphalt processing facility in this area is not practicable.

Dredging and construction of an offloading facility would increase the construction costs of the project by an estimated \$5.3 million. This increase in cost is associated with construction of a 300 foot long sheet pile bulk head, purchase and installation of an E-Crane, and dredging approximately 185,000 cubic yards within the Petaluma River. An increase in cost of this magnitude is unreasonable for a proposed project of this sort. Moreover, owing to the shallowness of the Petaluma River in this reach and the narrowness of the D Street Bridge that spans the river just downstream of the area, the site cannot be served by a standard size barge, which would substantially constrain and complicate operation of a facility there and further substantially increase expenses.

Construction and operation of an asphalt processing facility within the downtown Petaluma would not be compatible with the commercial and residential uses occurring and expanding there and would risk generating complaints of nuisance by nearby residents, property owners, and business operators. Local streets, especially residential streets, commonly are not designed to accommodate frequent and regular use by large industrial trucks and equipment, as residential and industrial needs are often very different. On streets serving industrial or commercial areas, the vehicle dimensions, traffic volumes, and vehicle loads can differ greatly from those on residential streets, and different dimensional and structural design values are appropriate. (See, e.g., American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets (4th ed. 2001), [https://nacto.org/docs/usdg/geometric design highways and streets_aashto.pdf](https://nacto.org/docs/usdg/geometric%20design%20highways%20and%20streets_aashto.pdf).)

7.4.6 Other Significant Adverse Environmental Consequences

Construction and operation of an asphalt processing facility within the downtown Petaluma would not be compatible with the commercial and residential uses occurring and expanding there and would risk generating complaints of nuisance by nearby residents, property owners, and business operators. Heavy truck traffic on local streets would have adverse impacts as discussed above.

7.4.7 Conclusion

Alternative Site B is not a less environmentally damaging practicable alternative location for the proposed project under the Guidelines because (1) no site could be identified in the area that would not allow for construction and operation of an asphalt processing facility that would achieve the overall project purpose, (2) construction and operation of an asphalt processing facility may have impacts on the aquatic ecosystem that are no less than those of the proposed project, (3) no site in the area is available, (4) construction and operation of an asphalt processing facility serving the overall project purpose on a site within the area would be impracticable, and (5) construction and operation of an asphalt processing facility at a site within the area would have other significant adverse environmental consequences.

7.5 Alternative Site C: Sonoma County Landfill Area

7.5.1 Description

Alternative Site C is the site of the Sonoma County Landfill or any nearby site along Meacham Road, Pepper Road, or Stony Point Road in Sonoma County north of Petaluma. The Sonoma County Landfill site is used as a municipal landfill, and nearby sites are used largely for agricultural and residential purposes.

The area, with the Sonoma County Landfill depicted, is shown in an aerial photograph in Figure 5 below.



Figure 5 - Aerial Photo - Alternative Site C

The Sonoma County Landfill site was evaluated as a potential alternative to the proposed project site by the County, and for that reason is also analyzed here even though it could well have been set aside in the initial screening. The County concluded that it was not a feasible alternative for multiple reasons, including it “would not meet the project’s underlying fundamental purpose of developing the Proposed Project on a site in proximity to both railroad tracks and a naturally deep-water site along the Petaluma River and with easy access to and from Highway 101,” “it would result in increased truck trips and associated traffic, air quality and noise impacts” and “is very close to a significant number of homes,” and “its incompatibility with current and future landfill operations.” (Resolution Ex. D, pp. 9-10.)

7.5.2 Overall Project Purpose

The area is located too far from any navigable waterway to allow for construction and operation of an asphalt processing facility serving the overall project purpose. The nearest navigable reach of the Petaluma River is more than six miles away.

The size of the Sonoma County Landfill site is unsuitable for fulfilling the overall project purpose and falls outside the pertinent screening criterion of five to ten contiguous developable acres of land. The site is far too large and comes with far too much excess land to serve as an alternative site to achieve the overall project purpose of constructing and operating an asphalt processing facility that requires at least five and as much as ten contiguous developable acres of land to accommodate the plant, associated outbuildings, storage areas, and truck access, loading, and parking. Similarly, other sites in the area currently devoted to agricultural uses generally are far too large to serve the overall project purpose.

7.5.3 Impacts on Aquatic Ecosystem

Some sites within the area may contain wetlands that could be affected by construction and operation of an asphalt processing facility.

7.5.4 Availability

Dutra has contacted a representative of the Sonoma County Landfill and confirmed that the site is currently in use as a municipal landfill and is unavailable for sale or lease. The representative added that the County is currently a party to a long-term operating agreement with another entity relating to operation of the landfill. The availability of other sites in the area is unknown.

7.5.5 Practicability

As the area is located too far from any navigable waterway, construction and operation of an asphalt processing facility in this area that would fulfill the overall project purpose is not practicable.

As the area is located within areas deemed habitat for the California tiger salamander, listed as endangered under the federal Endangered Species Act and threatened under the California Endangered Species Act, and the California red-legged frog, listed as threatened under the federal Endangered Species Act, construction and operation of an asphalt processing facility in the area could adversely affect either or both species and their habitat and may require approvals from federal and state agencies that may be problematic to obtain and, if obtainable, could entail unreasonably expensive mitigation measures.

As noted above, the Sonoma County Landfill site and generally the sites in the area used for agriculture are unsuitably large for fulfilling the overall project purpose and fall outside the pertinent screening criterion of five to ten contiguous developable acres of land. Such sites are far too large and come with far too much excess land to serve as an alternative site to achieve the overall project purpose of constructing and operating an asphalt processing facility that requires at least five and as much as ten contiguous developable acres of land to accommodate the plant, associated outbuildings, storage areas, and truck access, loading, and parking.

7.5.6 Other Significant Adverse Environmental Consequences

As the area is located within areas designated critical habitat for the California tiger salamander, listed as endangered under the federal Endangered Species Act and threatened under the California Endangered Species Act, and is within the range of recorded occurrences of California red-legged frog, listed as threatened under the federal Endangered Species Act, construction and operation of an asphalt processing facility in the area could adversely affect either or both species and their habitat.

7.5.7 Conclusion

Alternative Site C is not a less environmentally damaging practicable alternative location for the proposed project under the Guidelines because (1) the area is unsuitable for construction and operation of an asphalt processing facility to achieve the overall project purpose, (2) construction and operation of an asphalt processing facility may have impacts on the aquatic

ecosystem that are no less than those of the proposed project, (3) the Sonoma County Landfill site is unavailable, and the availability of others sites in the area is unknown, (4) construction and operation of an asphalt processing facility serving the overall project purpose on a site within the area would be impracticable, and (5) construction and operation of an asphalt processing facility at a site within the area would have other significant adverse environmental consequences.

7.6 Alternative Site D: Port Sonoma

7.6.1 Description

Alternative Site D is a 110-acre parcel located at 270 Sears Point Road in Sonoma County, California, which currently contains the various facilities of the Port Sonoma Marina, open water areas with direct access to the Petaluma River, and vacant land. The Northwestern Pacific Railroad Black Point Bridge crosses the Petaluma River about 780 feet south of the marina, and State Route 37 (Sears Point Road) is located approximately 500 feet north of the marina. The marina consists of several commercial buildings, parking and storage areas, and a number of slips, most of which are not actively used.

Surrounding land uses include the Petaluma River to the west and coastal salt marsh and farmed wetlands and agricultural lands to the north, east and south.

The portion of the Port Sonoma parcel considered as an alternative site for an asphalt processing facility comprises five to ten acres of vacant and developed land just north of the railroad tracks and south of the terminus of Railroad Avenue. By truck, this property is located approximately 5.1 miles east of Highway 101 in Novato and approximately 11 miles south of Petaluma.

A conceptual site plan of an asphalt plant on the site is depicted in Figure 6 below.

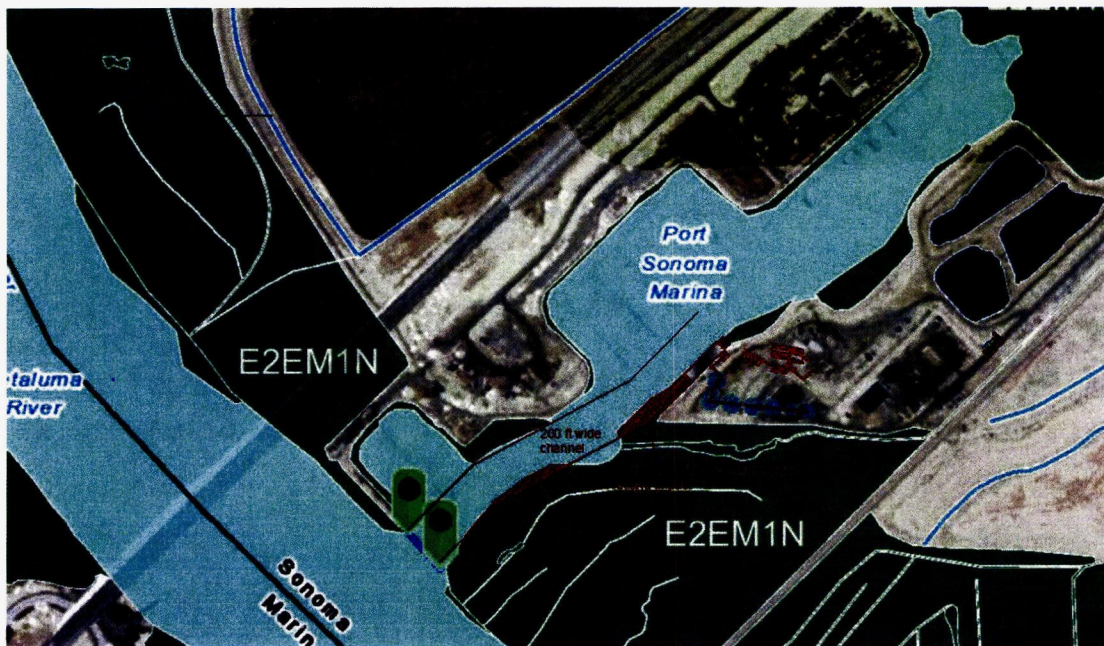


Figure 6 - Conceptual Site Plan - Alternative Site D

The site was evaluated as a potential alternative to the proposed project site by the County in its EIR, and for that reason is also analyzed here even though it could well have been set aside in the initial screening. The County concluded that the site was not a feasible alternative because “it would require constant dredging to support large deep water barges, and thus would not provide barge access.” (DEIR at VII-5; Resolution Ex. D, p. 8.) The County also stated:

Additionally, the site currently includes a recreational boating marina that raise[s] compatibility issues for an asphalt plant with associated truck and barge traffic. This site would also increase the delivery time to the southern Sonoma County market without decreasing the time to serve the Marin County market, resulting in additional truck traffic on area highways. The visibility of this site would also require extensive screening to mitigate the plant’s proximity from both east bound and west bound site [sic, sight] lines.

(Id.)

7.6.2 Overall Project Purpose

The site’s size, 110 acres, is unsuitable for fulfilling the overall project purpose and falls outside the pertinent screening criterion of five to ten contiguous developable acres of land. The site is far too large and comes with far too much excess land to serve as an alternative site to achieve the overall project purpose of constructing and operating an asphalt processing facility that requires at least five and as much as ten contiguous developable acres of land to accommodate the plant, associated outbuildings, storage areas, and truck access, loading, and parking.

7.6.3 Impacts on Aquatic Ecosystem

Construction and operation of an asphalt processing facility on this site would have adverse impacts on the aquatic ecosystem greater than those of the proposed project. Substantial dredging would be required to widen and deepen the water channel in the port to permit barge traffic from the Petaluma River to the asphalt processing facility. Such dredging would have adverse impacts on the open water of the port basin and the Petaluma River and shoreline areas associated with sedimentation. Such dredging would also require removal of about one acre of salt marsh, as shown on Figure 6. Construction and operation of an asphalt processing facility at the site would also require about 10,000 cubic yards of fill to be placed in or near the waters of the navigable channel in order to construct the bulk head required for offloading material from barges.

7.6.4 Availability

The site, owned by Berg Holdings, is unavailable. Dutra has contacted the property manager for the site and confirmed the site is not available for sale or lease.

7.6.5 Practicability

Even if the site was available, acquisition of the 110-acre site in order to construct and operate an asphalt processing facility requiring only five contiguous acres of developable land would be impracticable. Acquisition of such a large site with that much excess land would be unreasonably expensive. To the extent that the marina business at the site might also be acquired and operated on other parts of the site in an effort to defray the added cost of the excess acreage, doing so is impracticable owing to the added cost of acquiring and operating that business, the unknown viability and profitability of that business, and Dutra's lack of experience and interest in operating a business of that sort. Acquiring the overly large site with the thought of later subdividing it and selling the excess acreage is impracticable owing to the uncertainty of being allowed to subdivide the parcel, the regulatory conditions and associated costs of any subdivision that may be allowed, and being able to sell any subsequently created parcel at all, let alone within a reasonable time and at a price sufficient to defray the added cost of the excess acreage at the outset.

Dredging and construction of an offloading facility would increase the construction costs of the project by an estimated \$4.3 million. This increase in cost is associated with construction of a 300 foot long sheet pile bulk head, purchase and installation of an E-Crane, and dredging approximately 103,000 cubic yards within the Petaluma River. An increase in cost of this magnitude is unreasonable for a proposed project of this sort.

As portions of the site required for construction and operation of an asphalt processing facility are salt marsh, habitat for various species of wildlife and their habitat could be adversely affected by construction and operation of an asphalt processing facility. These species include the California Ridgeway's rail (formerly California clapper rail) and salt marsh harvest mouse, both of which are listed as endangered under the federal Endangered Species Act and California Endangered Species Act. As a result, construction and operation of an asphalt processing facility in the area would likely require approvals from federal and state agencies that may be

problematic to obtain and, if obtainable, could entail unreasonably expensive mitigation measures.

Moreover, the California Ridgeway's rail also is a "fully protected bird" under section 3511 of the California Fish and Game Code, which provides that "a fully protected bird may not be taken or possessed at any time" and, further, "[n]o provision of this code or any other law shall be construed to authorize the issuance of a permit or license to take a fully protected bird, and no permit or license previously issued shall have any force or effect for that purpose." The section allows an exception only for the Department of Fish and Wildlife to authorize taking a fully protected bird for "necessary scientific research." The salt marsh harvest mouse is also a fully protected species and falls under the same protective measures of the California Fish and Game Code. To the extent that removal of one acre of salt marsh habitat for both species could result in their taking, section 3511 could preclude that removal and preclude construction of an asphalt processing facility at the site.

7.6.6 Other Significant Adverse Environmental Consequences

As portions of the site required for construction and operation of an asphalt processing facility are salt marsh, habitat for various species of wildlife, including the California Ridgeway's rail (formerly California clapper rail) and salt marsh harvest mouse, both species listed as endangered under both the federal Endangered Species Act and California Endangered Species Act, construction and operation of an asphalt processing facility in the area could adversely affect these species and their habitat.

7.6.7 Conclusion

Alternative Site D is not a less environmentally damaging practicable alternative location for the proposed project under the Guidelines because (1) the site is unsuitable for construction and operation of an asphalt processing facility to achieve the overall project purpose, (2) construction and operation of an asphalt processing facility on the site would not have less adverse impact on the aquatic ecosystem than would the proposed project, (3) the site is not available for purchase or long-term lease, (4) construction and operation of an asphalt processing facility serving the overall project purpose on a site within the area would be impracticable, and (5) construction and operation of an asphalt processing facility at a site within the area would have other significant adverse environmental consequences.

7.7 Alternative Site E: Redwood Landfill

7.7.1 Description

Alternative Site E is a 420-acre parcel located at 8950 Redwood Highway in Marin County, California, which currently contains the facilities of Redwood Landfill, owned and operated by Waste Management, Inc., and some vacant land.

The site is nearly surrounded by several manmade and natural sloughs, including San Antonio Creek, Mud Slough, and South Slough, all of which are tributary to the Petaluma River about $\frac{3}{4}$ mile to the east. The Northwestern Pacific Railroad right-of-way borders the site on the west. East of the landfill, between San Antonio Creek and the Petaluma River, is an expanse of

tidal marsh that is part of the Petaluma Marsh Wildlife Area managed by the California Department of Fish and Wildlife. South of the site are agricultural uses, primarily ranching, and the Marin County Airport (Gnoss Field). The site has access to Highway 101, less than half a mile to the west, via a private road.

The portion of the Redwood Landfill parcel considered as an alternative site for an asphalt processing facility comprises five to ten acres of developed and vacant land at the eastern edge of the site adjacent to Mud Slough.

A conceptual site plan of an asphalt plant on the site is depicted in Figure 7 below.

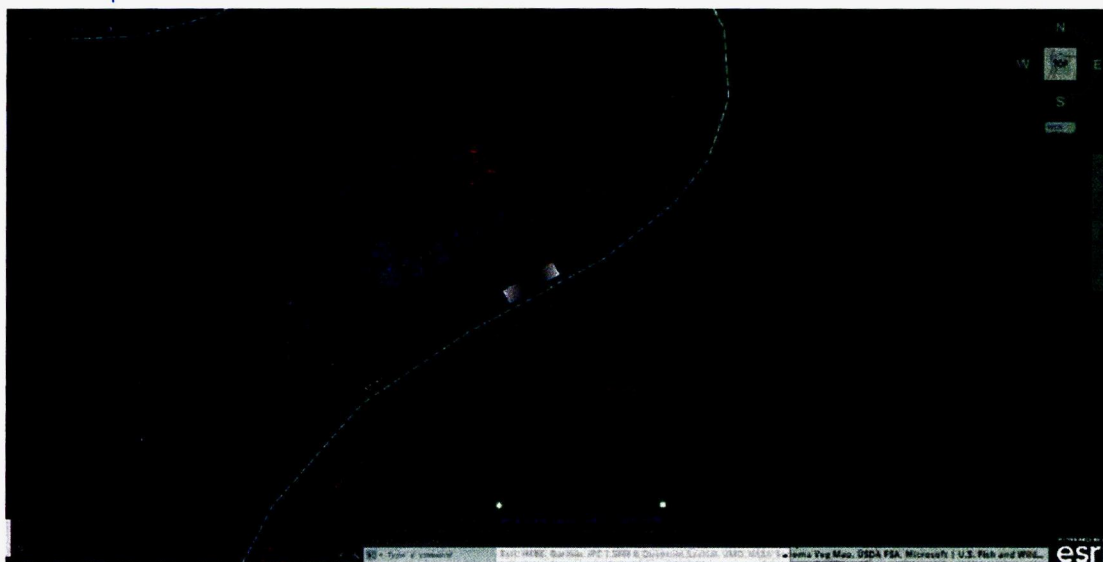


Figure 7 - Conceptual Site Plan - Alternative Site E

The site was evaluated as a potential alternative to the proposed project site by the County in its EIR, and for that reason is also analyzed here even though it could well have been set aside in the initial screening. The County concluded that the site was not a feasible alternative because “the Landfill has extensive habitat areas, and access to the Petaluma River would require new facilities and extensive dredging.” (DEIR at VII-5; see Resolution Ex. D, p. 8.) The County also stated:

The distance from the Petaluma River to Highway 101 is over one mile at this site, further increasing truck miles to deliver the finished product. This alternative site would not meet the project objective to reduce truck trips, nor would it meet the objective to locate the facility near deep water for barge access. Additionally, this alternative would require cooperation from the County of Marin.

(*Id.* at VII5-VII6; see Resolution Ex. D, p. 8.) The County further explained that “the north portion of San Pablo Bay is very shallow, and a mile or more of channel would need to be constructed and continually dredged in order to maintain access to the Bay.” (Resolution Ex. D, p. 8.)

7.7.2 Overall Project Purpose

The site is located too far from any navigable waterway to allow for construction and operation of an asphalt processing facility serving the overall project purpose. Mud Slough is not navigable by barge, and it winds for more than a mile from the site before reaching the nearest navigable reach of the Petaluma River.

The site's size, 420 acres, is unsuitable for fulfilling the overall project purpose and falls outside the pertinent screening criterion of five to ten contiguous developable acres of land. The site is far too large and comes with far too much excess land to serve as an alternative site to achieve the overall project purpose of constructing and operating an asphalt processing facility that requires at least five and as much as ten contiguous developable acres of land to accommodate the plant, associated outbuildings, storage areas, and truck access, loading, and parking.

7.7.3 Impacts on Aquatic Ecosystem

Construction and operation of an asphalt processing facility on this site would have adverse impacts on the aquatic ecosystem greater than those of the proposed project. Substantial dredging would be required to widen and deepen Mud Slough to permit barge traffic from the Petaluma River to the asphalt processing facility. Such dredging would have adverse impacts on the open water of Mud Slough and the Petaluma River and shoreline areas associated with sedimentation. Such dredging would also require removal of about four acres of salt marsh, as shown on Figure 7. Construction and operation of an asphalt processing facility at the site would also require about 10,000 cubic yards of fill to be placed in or near the waters of the navigable channel in order to construct the bulk head required for offloading material from barges.

7.7.4 Availability

The property is currently owned by Waste Management, headquartered in Houston, Texas. Dutra has contacted a representative of the owner and confirmed the site is not available for sale or long-term lease.

7.7.5 Practicability

Even if the site was available, acquisition of the 420-acre site in order to construct and operate an asphalt processing facility requiring only five contiguous acres of developable land would be impracticable. Acquisition of such a large site with that much excess land would be unreasonably expensive. To the extent that the landfill business at the site might also be acquired and operated on other parts of the site in an effort to defray the added cost of the excess acreage, doing so is impracticable owing to the added cost of acquiring and operating that business, the unknown viability and profitability of that business, and Dutra's lack of experience and interest in operating a business of that sort. Acquiring the overly large site with the thought of later subdividing it and selling the excess acreage is impracticable owing to the uncertainty of being allowed to subdivide the parcel, the regulatory conditions and associated costs of any subdivision that may be allowed, and being able to sell any subsequently created parcel at all, let alone within a reasonable time and at a price sufficient to defray the added cost of the excess acreage at the outset.

As the site is located too far from any navigable waterway, construction and operation of an asphalt processing facility in this area that would fulfill the overall project purpose is not practicable. It is unlikely that permits could be obtained from federal, state, and local agencies to dredge more than a mile of Mud Slough to create a navigable channel to the Petaluma River. Even if required permits could be obtained, that much dredging would be unreasonably expensive for a proposed project of this sort.

Dredging and construction of an offloading facility would increase the construction costs of the project by an estimated \$5.0 million. This increase in cost is associated with construction of a 300 foot long sheet pile bulk head, purchase and installation of an E-Crane, and dredging approximately 165,000 cubic yards within the Petaluma River. An increase in cost of this magnitude is unreasonable for a proposed project of this sort.

As portions of the site required for construction and operation of an asphalt processing facility and for dredging to deepen and widen the channel of Mud Slough are salt marsh, habitat for various species of wildlife, including the California Ridgeway's rail (formerly California clapper rail) and salt marsh harvest mouse, which are listed as endangered under both the federal Endangered Species Act and California Endangered Species Act, construction and operation of an asphalt processing facility in the area could adversely affect these species and their habitat and may require approvals from federal and state agencies that may be problematic to obtain and, if obtainable, could entail unreasonably expensive mitigation measures.

Moreover, the California Ridgeway's rail also is a "fully protected bird" under section 3511 of the California Fish and Game Code, which provides that "a fully protected bird may not be taken or possessed at any time" and, further, "[n]o provision of this code or any other law shall be construed to authorize the issuance of a permit or license to take a fully protected bird, and no permit or license previously issued shall have any force or effect for that purpose." The section allows an exception only for the Department of Fish and Wildlife to authorize taking a fully protected bird for "necessary scientific research." The salt marsh harvest mouse is also a fully protected species and falls under the same protective measures of the California Fish and Game Code. To the extent that removal of one acre of salt marsh habitat for both species could result in their taking, section 3511 could preclude that removal and preclude construction of an asphalt processing facility at the site.

7.7.6 Other Significant Adverse Environmental Consequences

As portions of the site required for construction and operation of an asphalt processing facility are salt marsh, habitat for various species of wildlife, including the California Ridgeway's rail (formerly California clapper rail) and salt marsh harvest mouse, both species listed as endangered under both the federal Endangered Species Act and California Endangered Species Act, construction and operation of an asphalt processing facility in the area could adversely affect these species and their habitat.

7.7.7 Conclusion

Alternative Site E is not a less environmentally damaging practicable alternative location for the proposed project under the Guidelines because (1) the site is unsuitable for construction

and operation of an asphalt processing facility to achieve the overall project purpose, (2) construction and operation of an asphalt processing facility on the site would not have less adverse impact on the aquatic ecosystem than would the proposed project, (3) the site is not available for purchase or long-term lease, (4) construction and operation of an asphalt processing facility serving the overall project purpose on a site within the area would be impracticable, and (5) construction and operation of an asphalt processing facility on the site would have other significant adverse environmental consequences.

7.8 Alternative Site F: Pomeroy Site

7.8.1 Description

Alternative Site F is a 34-acre parcel located at 500 Hopper Street, Petaluma, California. It is bounded on the south by the Petaluma River and, across the river, a community park and high-density residential uses, on the east by vacant land and then Highway 101, on the north by industrial uses, Hopper Street, and the Sonoma Marin Area Rail Transit (“SMART”) corridor. Pomeroy Corporation bought the site and the adjoining site to the east in the 1950s. It then constructed and operated a pre-stressed concrete fabrication facility on the site and used adjoining site for storage of materials and supplies and for treatment and disposal of diesel-laden soil. The site is currently undeveloped, generally flat, and largely covered with pavement, hard-packed gravel, and patches of ruderal vegetation.

A conceptual site plan of an asphalt plant on the site is depicted in Figure 8 below.

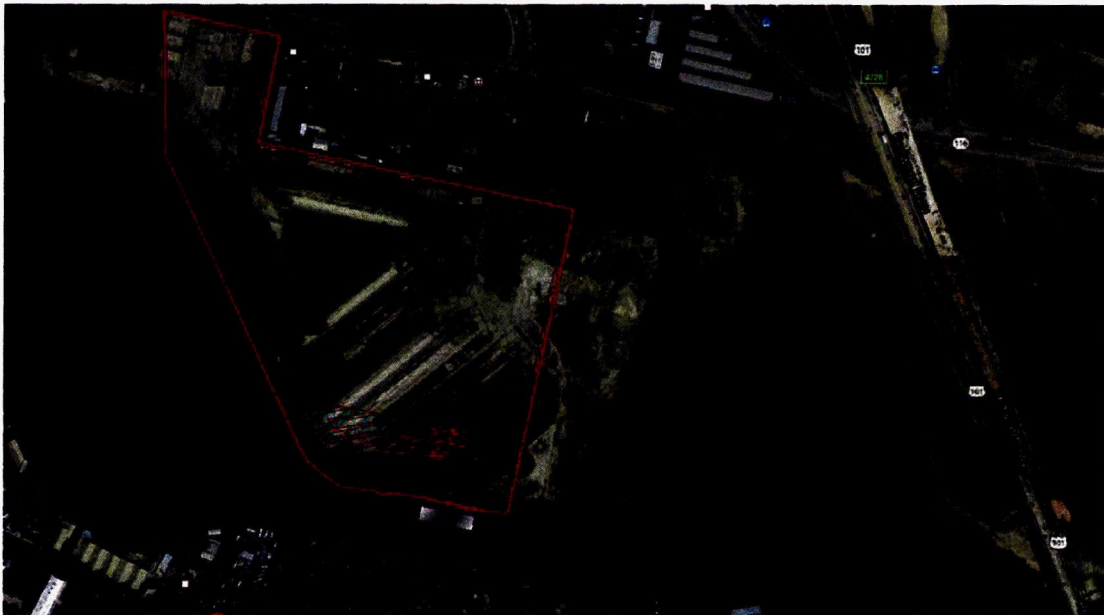


Figure 8 - Conceptual Site Plan - Alternative Site F

The site was evaluated as a potential alternative to the proposed project site by the County, which concluded that it was not a feasible alternative for multiple reasons, including it “is located within the City of Petaluma’s Central Specific Plan (CPSP), which does not allow

asphalt plants . . .” and thus would be “inconsistent” with that plan (Resolution Ex. D, pp. 8-9.) For this and other reasons, the County found that this alternative “would result in significant land use conflicts and environmental impacts on a large number of existing sensitive receptors,” “including the approximately 174-unit McNear Landing subdivision, the Valley Oak Elementary School, and the Pepper Preschool.” (Resolution Ex. D, p. 9.) “Additionally,” the County noted, “vehicular access to the Pomeroy site is currently limited to Hopper Street, which is in poor condition and is not a dedicated public road” and “[o]peration of the Proposed Project at the Pomeroy site also would result in more trucks using Hopper Street and other City streets.” (*Id.*)

7.8.2 Overall Project Purpose

The site’s size, 34 acres, is unsuitable for fulfilling the overall project purpose and falls outside the pertinent screening criterion of five to ten contiguous developable acres of land. The site is far too large and comes with far too much excess land to serve as an alternative site to achieve the overall project purpose of constructing and operating an asphalt processing facility that requires at least five and as much as ten contiguous developable acres of land to accommodate the plant, associated outbuildings, storage areas, and truck access, loading, and parking.

7.8.3 Impacts on Aquatic Ecosystem

Construction of a facility at the site may have impacts on the aquatic ecosystem along the shore of the Petaluma River. About 10,000 cubic yards of material would need to be placed in or near the navigable channel in order to construct the bulk head required for offloading material from barges. Owing to the shallowness of the Petaluma River in this reach, some dredging may be necessary to allow for barge traffic.

7.8.4 Availability

Dutra’s repeated attempts to contact the owner of the site were unsuccessful, so a realtor was engaged to research the site’s availability. The site is not available for sale or lease.

7.8.5 Practicability

Even if the site was available, acquisition of the 34-acre site in order to construct and operate an asphalt processing facility requiring only five contiguous acres of developable land would be impracticable. Acquisition of such a large site with that much excess land would be unreasonably expensive. Acquiring the overly large site with the thought of later subdividing it and selling the excess acreage is impracticable owing to the uncertainty of being allowed to subdivide the parcel, the regulatory conditions and associated costs of any subdivision that may be allowed, and being able to sell any subsequently created parcel at all, let alone within a reasonable time and at a price sufficient to defray the added cost of the excess acreage at the outset.

The site’s location adjacent to high-density residential uses and a community park presents an incompatibility with the surrounding land uses and a risk of generating complaints of nuisance by nearby residents.

7.8.6 Other Significant Adverse Environmental Consequences

Construction and operation of an asphalt processing facility at the site, located adjacent to high-density residential uses and a community park, presents an incompatibility with the surrounding land uses and a risk of generating complaints of nuisance by nearby residents.

7.8.7 Conclusion

Alternative Site F is not a less environmentally damaging practicable alternative location for the proposed project under the Guidelines because (1) the site is unsuitable for construction and operation of an asphalt processing facility to achieve the overall project purpose, (2) construction and operation of an asphalt processing facility may have impacts on the aquatic ecosystem that are no less than those of the proposed project, (3) the site is not available for purchase or long-term lease, (4) construction and operation of an asphalt processing facility serving the overall project purpose on the site would be impracticable, and (5) construction and operation of an asphalt processing facility on the site would have other significant adverse environmental consequences.

7.9 Alternative Site G: East of Pomeroy Site

7.9.1 Description

Alternative Site G is a 37-acre parcel immediately east of the Pomeroy site. It is bounded on the south by the Petaluma River and high-density residential uses across the river, on the east by Highway 101 and intervening vacant land, on the north by the Sonoma Marin Area Rail Transit ("SMART") corridor. The site is former marshland that was filled by hydraulic dredged material from the Petaluma River in the 1940s. Pomeroy Corporation bought the site and the adjoining site to the west in the 1950s. It then constructed and operated a pre-stressed concrete fabrication facility on the adjoining site and used this site for storage of materials and supplies and for treatment and disposal of diesel-laden soil. The site is currently undeveloped, generally flat, and largely covered with non-native grasses.

A conceptual site plan of an asphalt plant on about five to ten acres of the site is depicted in Figure 9 below.



Figure 9 - Conceptual Site Plan - Alternative Site G

7.9.2 Overall Project Purpose

The site's size, 37 acres, is unsuitable for fulfilling the overall project purpose and falls outside the pertinent screening criterion of five to ten contiguous developable acres of land. The site is far too large and comes with far too much excess land to serve as an alternative site to achieve the overall project purpose of constructing and operating an asphalt processing facility that requires at least five and as much as ten contiguous developable acres of land to accommodate the plant, associated outbuildings, storage areas, and truck access, loading, and parking.

7.9.3 Impacts on Aquatic Ecosystem

Construction of a facility at the site may have impacts on the aquatic ecosystem along the shore of the Petaluma River. About 10,000 cubic yards of material would need to be placed in or near the navigable channel in order to construct the bulk head required for offloading material from barges. Owing to the shallowness of the Petaluma River in this reach, some dredging may be necessary to allow for barge traffic.

7.9.4 Availability

The site is not available for sale or long-term lease. Dutra's repeated attempts to contact the owner of the site were unsuccessful, so a realtor was engaged to research the site's availability. According to public records, the property is being developed by Basin Street Properties as a mixed use project to include a 120-room hotel, 47,000 square feet of office space and up to 273 housing units.

7.9.5 Practicability

Even if the site was available, acquisition of the 34-acre site in order to construct and operate an asphalt processing facility requiring only five contiguous acres of developable land would be impracticable. Acquisition of such a large site with that much excess land would be unreasonably expensive. Acquiring the overly large site with the thought of later subdividing it and selling the excess acreage is impracticable owing to the uncertainty of being allowed to subdivide the parcel, the regulatory conditions and associated costs of any subdivision that may be allowed, and being able to sell any subsequently created parcel at all, let alone within a reasonable time and at a price sufficient to defray the added cost of the excess acreage at the outset.

The site's location adjacent to high-density residential uses presents an incompatibility with the surrounding land uses and a risk of generating complaints of nuisance by nearby residents. Heavy truck traffic on local streets would have adverse impacts as discussed above.

7.9.6 Other Significant Adverse Environmental Consequences

Construction and operation of an asphalt processing facility at the site, located adjacent to high-density residential uses, presents an incompatibility with the surrounding land uses and a risk of generating complaints of nuisance by nearby residents.

7.9.7 Conclusion

Alternative Site G is not a less environmentally damaging practicable alternative location for the proposed project under the Guidelines because (1) the site is unsuitable for construction and operation of an asphalt processing facility to achieve the overall project purpose, (2) construction and operation of an asphalt processing facility may have impacts on the aquatic ecosystem that are no less than those of the proposed project, (3) the site is not available for purchase or long-term lease, (4) construction and operation of an asphalt processing facility serving the overall project purpose on the site would be impracticable, and (5) construction and operation of an asphalt processing facility on the site would have other significant adverse environmental consequences.

7.10 Alternative Site H: Lakeville Road Site

7.10.1 Description

Alternative Site H is not a specific site, but rather an area near the intersection of State Route 37 (Sears Point Road) and Lakeville Road in Sonoma County, California, where one might imagine locating an asphalt processing plant. The area consists primarily of low-lying lands historically fringing San Pablo Bay that have long been separated from the Bay by levees and used for agriculture, including hay production and cattle and sheep grazing. Highway 101 is approximately five miles to the west. The area is depicted in an aerial photograph in Figure 10 below.



Figure 10 - Aerial Photo - Alternative Site H

This area was evaluated as a potential alternative to the proposed project site by the County in its EIR, and for that reason is also analyzed here even though it could well have been set aside in the initial screening. The County concluded that the area did not present a feasible alternative “because of traffic congestion, truck access issues, and travel times to the market.” (DEIR at VII-5; Resolution Ex. D, p. 8.) Other substantial constraints, the County found, also rendered this potential alternative infeasible:

In addition, while there are some waterways and sloughs providing access to San Pablo Bay, barge access would not be feasible. Siltation rates from San Pablo Bay are very high, requiring continual dredging to maintain access. Furthermore, the north portion of San Pablo Bay is very shallow, and a mile or more of channel would need to be constructed and continually dredged in order to maintain access to the Bay.

(Id.)

7.10.2 Overall Project Purpose

The area is located too far from any navigable waterway to allow for construction and operation of an asphalt processing facility serving the overall project purpose. The nearest navigable reach of the Petaluma River is about two miles away. San Pablo Bay is more than a mile away and separated from the site by a highway, railroad, and an expanse of upland fields and salt marsh; as expansive shallow mudflats border the Bay, navigable portions of the Bay are even more distant.

Sites in the area are of a size that is unsuitable for fulfilling the overall project purpose and falls outside the pertinent screening criterion of five to ten contiguous developable acres of land. The sites are far too large and come with far too much excess land to serve as an

alternative site to achieve the overall project purpose of constructing and operating an asphalt processing facility that requires at least five and as much as ten contiguous developable acres of land to accommodate the plant, associated outbuildings, storage areas, and truck access, loading, and parking.

7.10.3 Impacts on Aquatic Ecosystem

As large portions of most sites within the area exhibit wetland characteristics, construction and operation of an asphalt processing facility may require filling some wetlands and may have other indirect impacts on wetlands.

Substantial dredging to construct and maintain a navigable channel from the site to a navigable reach of the Petaluma River or San Pablo Bay would necessarily cause significant impacts to intervening seasonal wetlands, saltmarsh, and mudflats. Such dredging would as well have sedimentation impacts on the waters of the river and bay.

7.10.4 Availability

The four sites comprising the area are currently owned by the Sonoma Land Trust and the Bureau of Land Management. A project manager for the land trust confirmed the sites are not available for sale or long-term lease. Dutra's attempts to contact the BLM regarding availability of its sites have been unsuccessful.

7.10.5 Practicability

Even if a site within the area was available, acquisition of a large site of the sort occurring in the area in order to construct and operate an asphalt processing facility requiring only five contiguous acres of developable land would be impracticable. Acquisition of such a large site with that much excess land would be unreasonably expensive. Acquiring the overly large site with the thought of later subdividing it and selling the excess acreage is impracticable owing to the uncertainty of being allowed to subdivide the parcel, the regulatory conditions and associated costs of any subdivision that may be allowed, and being able to sell any subsequently created parcel at all, let alone within a reasonable time and at a price sufficient to defray the added cost of the excess acreage at the outset.

As the site is located too far from any navigable waterway, construction and operation of an asphalt processing facility in this area that would fulfill the overall project purpose is not practicable. It is unlikely that permits could be obtained from federal, state, and local agencies to dredge two miles or so to create a navigable channel to the Petaluma River or San Pablo Bay. Even if required permits could be obtained, that much dredging would be unreasonably expensive for a proposed project of this sort.

Dredging and maintenance of such a channel and construction of an offloading facility at the site would greatly increase the construction and operation costs of the project. It is estimated that 1.2 million cubic yards of material would need to be dredged in order to provide access for barges to the site. In addition to the construction of the offloading facility, construction costs associated with the additional scope are estimated to be approximately \$17.5 million. Such costs would be unreasonably expensive for a proposed project of this sort.

As portions of the land that would need to be dredged to construct and maintain a navigable channel to the site are salt marsh, habitat for various species of wildlife, including the California Ridgeway's rail (formerly California clapper rail) and salt marsh harvest mouse, species both), listed as endangered under the federal Endangered Species Act and California Endangered Species Act, construction and operation of an asphalt processing facility in the area could adversely affect these species and their habitat and would likely require approvals from federal and state agencies that may be problematic to obtain and, if obtainable, could entail unreasonably expensive mitigation measures.

Moreover, the California Ridgeway's rail also is a "fully protected bird" under section 3511 of the California Fish and Game Code, which provides that "a fully protected bird may not be taken or possessed at any time" and, further, "[n]o provision of this code or any other law shall be construed to authorize the issuance of a permit or license to take a fully protected bird, and no permit or license previously issued shall have any force or effect for that purpose." The section allows an exception only for the Department of Fish and Wildlife to authorize taking a fully protected bird for "necessary scientific research." The salt marsh harvest mouse is also a fully protected species and falls under the same protective measures of the California Fish and Game Code. To the extent that removal of substantial areas of salt marsh habitat for this species would result in a taking of the species, section 3511 may preclude that removal and preclude dredging of a channel and thus construction and operation of an asphalt processing facility at the site.

7.10.6 Other Significant Adverse Environmental Consequences

As portions of the land that would need to be dredged to construct and maintain a navigable channel to the site are salt marsh, habitat for various species of wildlife, including the California Ridgeway's rail (formerly California clapper rail) and salt marsh harvest mouse, both species which are), listed as endangered under the federal Endangered Species Act and California Endangered Species Act, construction and operation of an asphalt processing facility in the area could adversely affect these species and their habitat.

7.10.7 Conclusion

Alternative Site H is not a less environmentally damaging practicable alternative location for the proposed project under the Guidelines because (1) no site in the area is suitable for construction and operation of an asphalt processing facility to achieve the overall project purpose, (2) construction and operation of an asphalt processing facility on a site within the area would not have less adverse impact on the aquatic ecosystem than would the proposed project, (3) no site within the area is available for purchase or long-term lease, (4) construction and operation of an asphalt processing facility serving the overall project purpose on a site within the area would be impracticable, and (5) construction and operation of an asphalt processing facility on a site within the area would have other significant adverse environmental consequences.

8.0 ANALYSIS OF ON-SITE ALTERNATIVES

8.1 Initial Screening of Potential Alternatives

The overall project purpose was used to focus initial review of potential on-site alternatives on those capable of fulfilling that purpose.

The County posited and evaluated several on-site alternatives in its EIR with this thought in mind. (DEIR at VII-2 to VII-5, VII-8 to VII-20.) In its EIR, the County divided the site into four areas (A, B, C, and D) for purposes of discussion. A graphic depiction of the site and these areas is shown in Figure 11.

Figure 11 - County's On-Site Alternatives from EIR

Area A, comprising about 0.8 acres, is located along the west shore of the Petaluma River, and is bordered by the Sonoma Marin Area Rail Transit (SMART) right of way (formerly Northwestern Pacific Railroad) to the southwest, an aggregate off-loading and distribution facility of Shamrock Materials to the north, and a residence on a parcel to the south. Area A has a compacted gravel surface that gently slopes northward. A small tidally influenced brackish marsh bisects the parcel southwest to northeast where it connects with the Petaluma River. Vegetation comprising mainly ruderal (weedy) non-native species that typically colonize

disturbed areas grows sporadically across the parcel, particularly on the edges of the grading next to the River and tributary marsh. Some native species remain on the perimeter of the waterway, primarily bulrush, and pickleweed. Pacific Gas and Electric (PG&E) maintains a high pressure gas transmission main (450 PSI) that runs under the Petaluma River and through this parcel.

Areas B, C, and D, together comprising slightly more than 37 acres, are located south of Area A and on the opposite side (i.e., south) of the SMART right of way, and are bordered on the southwest by Highway 101's northbound Petaluma exit (Petaluma Boulevard South), on the northeast by the SMART right of way and two residential dwellings beyond, and on the north and southeast by vacant land. Area B contains a small hill with an elevation of about 32 feet above sea level on the northeastern part of the area which slopes down towards the west and south. Low-lying vegetation covers much of the area, and apart from a few remnants, little evidence remains of the several farm structures that occupied this parcel until 2004. Area C consists primarily of open grassland with the exception of brackish marsh occurring on two man-made ditches that bisect the site in an east-west direction. A single willow (*Salix* sp.) and coast live oak (*Quercus agrifolia*) tree occur together near the center of the parcel. Area D contains open grasslands, seasonal wetlands, brushfields, coastal brackish marsh, and a large settling pond from former quarry operations in the southwestern corner.

The County considered and discussed a variety of on-site alternatives.

It considered development of Area A only, but rejected that alternative as infeasible because "Area A is not large enough to accommodate the proposed project." (*Id.* at VII-5.)

The County considered development of only Areas B, C, and D, without using Area A. It found this alternative to be infeasible because it would not meet the applicant's primary objective of developing a facility "in proximity to a naturally deep-water site along the Petaluma River where a barge and off-load facilities can accommodate deliveries of aggregate by water." (*Id.*) The County further found that this alternative would require the project "to find alternative means to provide materials for processing" and therefore "would not meet the project objective to reduce truck trips, which would increase impacts from traffic, noise and air quality." (*Id.*)

As the CEQA Guidelines require evaluation of a no-project alternative (14 Cal. Code Reg. § 15126.6(e)), the County considered that alternative as well. (DEIR at VII-6 to VII-8.) Observing that the alternative "would not meet any of the project objectives" (DEIR at VII-8), the County found that it "would not promote the goal of constructing a replacement asphalt facility capable of receiving, processing, and providing a variety of asphalt, recycled asphalt products, and general construction materials such as sand and rock to serve the southern Sonoma and Marin County region," "would not result in the construction of a facility similar to the former Dutra Asphalt facility, capable of meeting local asphalt and construction material demands of private and government projects in southern Sonoma County and Marin County," "would not reduce truck traffic and the associated air quality and greenhouse gas emissions by not locating a facility within reasonable distance of source quarries located in Sonoma County and Marin Counties [sic, County]," and "would result in indirect environmental effects such as increased use of fuel to transport aggregate material, increased truck traffic on local roads, increased deterioration of roads due to heavy trucks" resulting from "[t]he import of asphalt and

aggregate from more distant sources.” For these and additional reasons, the County concluded that “this alternative is not feasible.” (Resolution Ex. D, p. 10; see DEIR at VII-6 to VII-8.)

The County also considered a reduced-production alternative and a modified-site-plan alternative and, for a host of reasons, found them to be infeasible. (DEIR at VII-8 to VII-13; Resolution Ex. D, pp. 11-13.)

For this Alternatives Analysis, potential alternatives were further reviewed based on capability to achieve overall project purpose, effects on aquatic resources, practicability, and other significant environmental consequences to screen out those obviously unsuitable as alternatives and identify those most suitable for closer analysis.

This initial screening eliminated the alternatives discussed by the County in its EIR and identified two potential alternatives for further analysis more pertinent to the Guidelines: (1) a no-fill alternative that would avoid filling any waters of the United States and (2) a reduced-fill alternative that would fill some wetlands, but not as much as would the proposed project. Each is discussed below with respect to meeting the requirements of the Guidelines regarding capability to achieve the overall project purpose, impacts on the aquatic ecosystem, practicability, and other significant environmental consequences.

8.2 Criteria for Analysis of Alternatives

8.2.1 Project Purpose

In order to enable achievement of the overall project purpose, an on-site alternative must allow for the construction and operation of a commercially competitive asphalt processing facility with access to a navigable waterway to provide asphalt, aggregate, sand, and related products for public and private construction projects in northern and western Marin County and southern Sonoma County.

Specific criteria used to determine whether an alternative allows for achievement of the overall project purpose are:

- **Suitable Size and Configuration**

Is the site of a size, shape, and configuration of the alternative suitable for construction and operation of a commercially competitive asphalt processing facility? The alternative should provide at least five and as much as ten contiguous developable acres of land to accommodate the plant, associated outbuildings, storage areas, and truck access, loading, and parking.

- **Access to Navigable Waterway**

Does the alternative afford access to a navigable waterway enabling transport of asphalt, aggregate, sand, and related products to and from the project?

- **Access to Transportation Infrastructure**

Does the alternative afford access to roads and highways enabling transport of asphalt, aggregate, sand, and related products to and from the project?

8.2.2 Aquatic Ecosystem Impacts

The Guidelines call for an applicant to demonstrate that there are no practicable alternatives to the proposed discharge that “would have less adverse impact on the aquatic ecosystem” and does not have other significant adverse environmental consequences. By this reference to the “aquatic ecosystem,” the Guidelines call for a qualitative, and not merely quantitative, evaluation of pertinent impacts. The Guidelines define “aquatic ecosystem to mean “waters of the United States, including wetlands, that serve as habitat for interrelated and interacting communities and populations of plants and animals.” (40 C.F.R. § 230.3(c).) Analysis of on-site alternatives thus should consider effects on the aquatic ecosystem with respect to the habitat it provides for interrelated and interacting communities and populations of plants and animals.

Specific criteria used to determine potential impacts on the aquatic ecosystem resulting from development of an alternative are:

- **Impacts on Waters of the United States Serving as Habitat**

What impacts would development of the alternative have on waters of the United States? This impact may be expressed quantitatively, e.g., acreage or linear feet.

To what extent do the impacted waters of the United States serve as habitat for interrelated and interacting communities and populations of plants and animals? What would be the impact on such habitat? This impact may be expressed qualitatively as well as quantitatively.

8.2.3 Practicability (Cost, Logistics, and Technology)

The Guidelines call for evaluating whether a potential alternative may serve as a “practicable” alternative for achieving the overall project purpose “taking into consideration cost, existing technology, and logistics.” (40 C.F.R. § 230.10(a)(1) & (2).)

The considerations pertinent to evaluating the practicability of an alternative may be many and various depending on circumstances and may overlap in some respects with the considerations assessed in evaluating whether an alternative is capable of achieving the overall project purpose. Common considerations include the following.

- **Suitable Size and Configuration**

Size, shape, and configuration of an alternative naturally may be considered in evaluating whether the alternative is a “practicable” means of achieving the overall project purpose. (As discussed earlier, such considerations also figure into evaluating whether the overall project purpose may be accomplished by an alternative.) The alternative naturally should not present constraints that preclude the design, construction, and operation of an asphalt processing facility.

- **Legal Constraints**

Construction and operation of the alternative should be consistent with applicable laws and regulations. To the extent that applicable laws and regulations allow the possibility of the using the site for the alternative but require one or more permits or approvals to do so, such permits or approvals should be reasonably obtainable within a reasonable time.

- **Access to Navigable Waterway and Transportation Infrastructure**

The alternative should have reasonable access to a navigable waterway for barge transport and to transportation infrastructure, including Highway 101, for truck transport.

- **Access to Other Infrastructure**

The alternative should have reasonable access to utilities, particularly a natural gas line, necessary for operation of an asphalt processing facility.

- **Compatibility with Surrounding Land Uses**

The alternative should be situated such that its construction and operation would be compatible with surrounding land uses and would not conflict with such uses or create a nuisance owing to concerns about noise, aesthetics, air quality, health and safety, or similar considerations.

- **Cost**

The alternative should allow for its construction and operation at a reasonable cost. In assessing the practicability of alternatives, the Corps naturally should consider cost and reject alternatives that are unreasonably expensive.

The Guidelines require the Corps, when analyzing the practicability of alternatives, to take "cost" into account, but do not specify how to do so. (40 C.F.R. § 230.10(a)(2).) In its preamble to the Guidelines, though, the EPA clarified: "Our intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project." (45 Fed. Reg. 85335, 85339 (1980).) "If an alleged alternative is unreasonably expensive to the applicant, the alternative is not 'practicable.'" (*Id.* at 85343.)

The EPA and Corps have elaborated that in assessing cost the Corps considers not the financial circumstances of a particular applicant, but rather what is typical and reasonable for the type of project under consideration. "The determination of what constitutes an unreasonable expense should generally consider whether the projected cost is substantially greater than the costs normally associated with the particular type of project. . . . It is important to emphasize, however, that it is not a particular applicant's financial standing that is the primary consideration for determining practicability, but rather characteristics of the project and what constitutes a reasonable expense for these projects that are most relevant to practicability determinations." (Corps of Engineers and EPA, Memorandum to the Field, Appropriate Level of Analysis

Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements (Aug. 23, 1993); *see also Friends of the Earth v. Hintz*, 800 F.2d 822, 833-834, (9th Cir. 1986), illustrating the Corps' consideration of cost metrics, *i.e.*, cost per unit of materials handled (logs), pertinent to the type of project, a log export handling yard; *Sierra Club v. Flowers*, 423 F.Supp.2d 1273, 1333, 1358 (S.D. Fla. 2006), faulting the Corps for not using a standard industry metric (rock yield per acre) in evaluating alternatives to a proposed rock mining operation.)

8.2.4 Other Significant Environmental Consequences

The alternative should allow for its construction and operation without causing other significant adverse environmental consequences, such as significant impacts to endangered species or habitats deemed particularly sensitive or any other aspect of the environment. The alternative should be situated such that its construction and operation would be compatible with surrounding land uses and would not conflict with such uses owing to concerns about noise, aesthetics, air quality, health and safety, or similar considerations.

The Guidelines call for evaluating whether alternatives would have "other significant adverse environmental consequences" (apart from those on the aquatic ecosystem) and generally prohibit a discharge if there is a practicable alternative having less adverse impact on the aquatic ecosystem "so long as the alternative does not have other significant adverse environmental consequences." (40 C.F.R. § 230.10(a).) This provision establishes that "the existence of an alternative which is less damaging to the aquatic ecosystem does not disqualify a discharge if that alternative has other significant adverse environmental consequences." (45 Fed. Reg. 85340 (1980).) It gives the Corps "an opportunity to take into account evidence of damage to other ecosystems in deciding whether there is a 'better' alternative." (*Id.*)

8.3 Alternative 1: No Fill

8.3.1 Description

The No Fill Alternative avoids filling any wetlands and waters, including the approximately 1.84 acres of seasonal wetlands that would be filled by the proposed project. The alternative removes fill from 1.09 acres of Wetland A within the parking/storage area, 0.02 acres of Wetland J within the stockpile area and sound wall, 0.142 acres in Drainage Ditches 1 & 2 located within the proposed access to the storage area, 0.12 acres within Drainage Ditches 5 and 6 within the berm and access to the storage area, and 0.47 acres of underperforming mitigation wetlands on the Conveyor Corridor site where the conveyor is to be constructed and maintained.

A conceptual site plan of an asphalt plant on the site under the No Fill Alternative is depicted in Figure 12 below.

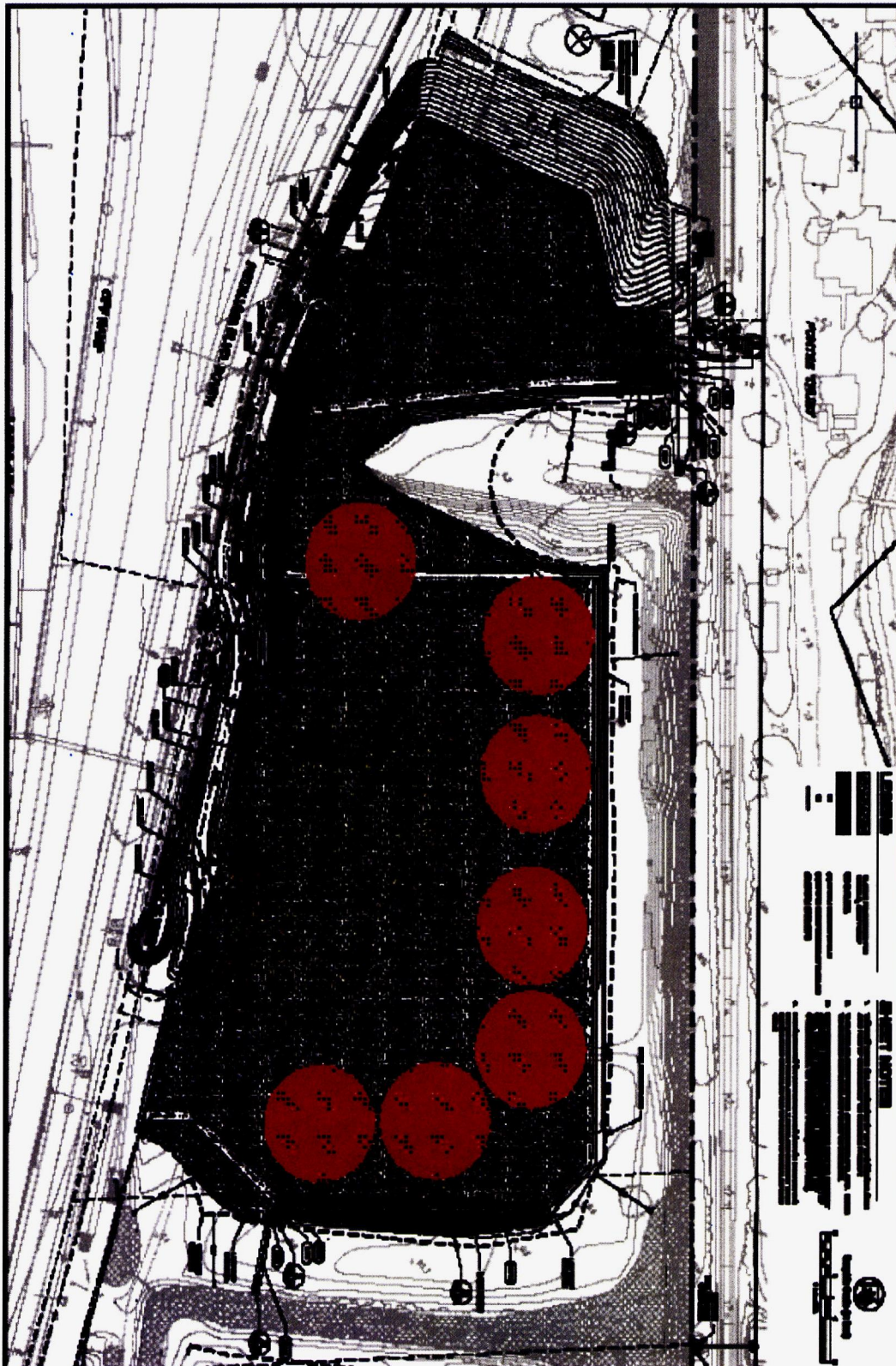


Figure 12 - Conceptual Site Plan - No Fill Alternative

8.3.2 Overall Project Purpose

The No Fill Alternative precludes construction and operation of a conveyor system to the Shamrock's Landing Way Facility and thus fails to afford access to a navigable waterway and fails to achieve the overall project purpose.

The No Fill Alternative also renders the size and configuration of the available area of the project site unsuitable to achieve the overall project purpose. Removal of the 1.09 acres of fill within Wetland A and Drainage Ditches 1 & 2, eliminates access to an area for customer trucks to maneuver, queue for loading, and storage area for equipment.

It is common with respect to both public and private paving projects, especially in the case of state highway projects, for a contractor to hire a number of trucks to haul asphalt or aggregates to the project. The number of trucks can vary depending on the distance from the plant to the site, the quantity of material required, and the production rate of the crew. It is also common to have multiple contractors hauling for multiple projects at the same time. As a result, the plant is relied upon to provide space to queue customer trucks while they are waiting to be loaded. These queues can be as large as 20 trucks. If the site is unable to adequately queue customer trucks, the site would lose its ability to be commercially competitive for public and private construction projects, especially larger highway projects.

Removal of fill located within Wetland J reduces the stockpiling and operational area within the asphalt plant, resulting in a reduced stockpile storage capacity. This reduction in storage capacity would preclude the plant from being commercially competitive as the site storage capacity would not be balanced with the asphalt plant production and inventory replenishment capabilities.

8.3.3 Impacts on Aquatic Ecosystem

The No Fill Alternative does not impact the aquatic ecosystem.

8.3.4 Practicability

As discussed above, the elimination of access to the parking and storage area creates a logistical constraint rendering the size and configuration of the area on the site available for the project unsuitable for practicable operation of the asphalt plant.

As also discussed above, removal of fill within Wetland J results in a site layout that is unsuitable for practicable operation of the asphalt plant due to the reduction of site size. The resultant site layout would require stockpiles to be placed too close to the asphalt plant, restricting the ability for truck and equipment traffic to navigate the site safely.

8.3.5 Other Significant Adverse Environmental Consequences

The No Fill Alternative does not create any other significant adverse environmental consequences.

8.3.6 Conclusion

The No Fill Alternative is not a less environmentally damaging practicable alternative for the proposed project under the Guidelines because (1) the alternative is unsuitable for construction and operation of an asphalt processing facility to achieve the overall project purpose and (2) construction and operation of an asphalt processing facility serving the overall project purpose on the site would be impracticable.

8.4 Alternative 2: Reduced Fill

8.4.1 Description

The Reduced Fill Alternative reconfigures the access road, reduces the size of the parking/storage area, and relocates the vegetated berm and storm water control structures; it is otherwise identical to the proposed project. Reconfiguration of the access road reduces fill within Drainage Ditch 1 by 0.11 acre. The road reconfiguration and berm relocation completely eliminates fill within Drainage Ditches 5 & 6. By reducing the size of the parking and storage area, fill of Wetland A can be completely avoided. The Reduced Fill Alternative would avoid filling 1.32 acres of wetlands that otherwise would be filled under the proposed project and would reduce wetland fill to 0.52 acre.

Removal of that remaining 0.52 acre of wetlands cannot practicably be avoided in constructing and operating an asphalt plant under the Reduced Fill Alternative that achieves the overall project purpose. This alternative would, like the proposed project, fill a 0.2 acre portion of Wetland J as shown on Figure 13. That portion of Wetland J is located at a central and critical point in the site plan of the Reduced Fill Alternative, where the conveyor system from the Shamrock's Landing Way Facility enters the project site and distributes materials to the several stockpiles lined in a row in order to receive materials from the conveyor system. The small portion of Wetland J to be filled lies directly under one of the stockpiles, the conveyor system, and other plant facilities. Moving those project components is impracticable, as doing so would necessitate moving the entire row of stockpiles as well as the corresponding portion of the conveyor system, and there is insufficient area on the project site to relocate such a sizeable portion of the project. In addition, fill within Wetland J occurs within the footprint of the foundation for the 16 foot tall sound wall to be constructed as required by the County's Conditional Use Permit. This alternative reduces fill within Drainage Ditch DD1 from 0.14 acre to 0.03 acre. Fill within this area cannot be practicably avoided because surrounding site elevations limit the ability to construct a structure with sufficient load bearing capacity to provide access to the storage area. This alternative would, like the proposed project, also remove the 0.47-acre wetland on the Conveyor Corridor site. The proposed conveyor system would run the length of this roughly linear shaped wetland since, given the need to direct the system to and from the project site and terminate it at a particular spot on the Petaluma River, there is no practicable way to shift the location of the conveyor system to one side or the other in order to avoid the wetland. Construction of the conveyor system will require filling portions of the wetland by installing sizeable piers on which to mount the system and removing the remainder of the wetland as part of construction activities with heavy equipment to install the piers and mount the conveyor system and thereafter monitor and maintain the system.

A conceptual site plan of an asphalt plant on the site under the Reduced Fill Alternative is depicted in Figure 13 below.



Figure 13 – Conceptual Site Plan - Reduced Fill

8.4.2 Overall Project Purpose

Although the Reduced Fill Alternative results in a slightly reduced size of the project area, the reduction does not preclude the project from being commercially competitive or otherwise achieving the overall project purpose.

8.4.3 Impacts on Aquatic Ecosystem

The Reduced Fill Alternative would fill 0.52 acre of wetland, a 1.32 acre reduction of wetland fill compared to the proposed project.

8.4.4 Practicability

The Reduced Fill Alternative allows a site layout that is logistically and technologically feasible and does not significantly alter construction costs.

8.4.5 Other Significant Adverse Environmental Consequences

The Reduced Fill Alternative does not result in any other significant adverse environmental consequences.

8.4.6 Conclusion

The Reduced Fill Alternative satisfies the overall project purpose, reduces impacts to the aquatic ecosystem and is logistically, technologically, and financially practicable. For these reasons, the Reduced Fill Alternative has been identified as the least environmentally damaging practicable alternative under the Guidelines.

9.0 SUMMARY AND CONCLUSION

Based on the foregoing analysis, the Reduced Fill Alternative is the least environmentally damaging practicable alternative under the Guidelines.

Initial screening identified eight potential offsite alternatives to be analyzed in greater detail. Analysis has demonstrated none of those alternatives to be a less damaging practicable alternative location for the project under the Guidelines. Alternative Sites D, E, and H would not have less adverse impact on the aquatic ecosystem than would the proposed project (nor, *a fortiori*, the Reduced Fill Alternative). Moreover, these sites fail as alternatives because (1) they are for various reasons unsuitable for construction and operation of an asphalt processing facility to achieve the overall project purpose, (2) they are unavailable, (3) for various reasons construction and operation of an asphalt processing facility on the sites serving the overall project purpose would be impracticable, and (4) for various reasons construction and operation of an asphalt processing facility at the sites would have other significant adverse environmental consequences. Alternative Sites A, B, C, F, and G may have impacts on the aquatic ecosystem that are no less than that of the proposed project (and, *a fortiori*, the Reduced Fill Alternative). Moreover, these sites also fail as alternatives for additional reasons of much the same sort as noted with respect to Alternative Sites D, E, and H.

Initial screening identified two potential onsite alternatives to be analyzed in greater detail. Analysis has demonstrated the No Fill Alternative not to be a less environmentally damaging practicable alternative to the proposed project under the Guidelines because (1) it does not allow for construction and operation of an asphalt processing facility to achieve the overall project purpose and (2) construction and operation of an asphalt processing facility serving the overall project purpose under this alternative would be impracticable.

Analysis of both onsite and offsite alternatives has revealed the Reduced Fill Alternative to be the least environmentally damaging practicable alternative under the Guidelines. Accordingly, Dutra proposes to proceed with the Reduced Fill Alternative rather than the proposed project.